United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 142 January 25, 1983

BUDGET UPDATE

BARC has tentatively been identified for a $2.8 million program increase in the FY 83 budget recently approved for ARS. Of this increase, $1.6 million is targeted toward basic research in plant and animal production; $710,000 is for plant germplasm enhancement; and $475,000 is in the area of animal health. The overall increase for ARS in FY 83 was over $17 million. This level of budget increase in a time of severe fiscal austerity is a tribute to the priority placed upon agricultural research within the Federal budget by the current Administration.

VISITING SCIENTISTS

AEQI (Soil Nitrogen and Environmental Chemistry Laboratory)

Dr. D. R. Bouldin, Professor of Soil Science, Cornell University, is spending a 6-month sabbatical leave working with the soil nitrogen research group on the evaluation of techniques for predicting rates of mineralization in soils. His research interests include other aspects of soil nitrogen chemistry and general problems in the availability of plant nutrients in soils in relation to crop yields.

Dr. Gary W. Hergert, Associate Professor of Soil Science, University of Nebraska, will be evaluating several chemical extraction procedures for their usefulness in predicting the availability of soil nitrogen. This work is an important step towards developing improved methods for forecasting nitrogen fertilizer requirements of soils. He will concentrate on soil samples from Nebraska and Maryland where crop responses to nitrogen fertilizer have been calibrated in special field experiments.

HSI (Instrumentation Research Laboratory)

Dr. Lorand Horvath, an electrical engineer from the Central Food Research Institute, Budapest, Hungary, recently spent about 6 weeks working with the near-infrared spectrophotometer (NIR). He brought samples of wheat-bran mixtures with a wide range of constituents and evaluated the NIR technique for measuring the composition of these samples. Constituents measured included: protein, starch, cellulose, hemicellulose, pectin, lignin, and dietary fiber. Dr. Horvath's visit was part of an exchange program between Hungary and the U.S. which has been in effect for several years. He returned to Budapest the middle of January.

PPHI (Hydrology Laboratory)

Mr. A. K. Bhar from the National Institute of Hydrology, University of Roorkee, India, is here spending a 5-month sabbatical. Mr. Bhar will be working on remote sensing applications to hydrology with E. Ted Engman and other scientists in the Hydrology Laboratory until mid-May 1983.

EDUCATIONAL INSTITUTION TO BE A NEW NEIGHBOR

Groundbreaking for the new campus of the Capitol Institute of Technology will be held on Saturday, April 23, 1983. This new campus is adjacent to the northwest boundary of BARC, along Springfield Road, site of the former Beltsville Race Track. Dr. G. William Troxler, President of the College, recently visited with Center Director Paul Putnam to discuss mutual interests and ways for the two institutions to work cooperatively as neighbors. This educational facility will be conveniently located for employees who may wish to receive training in rapidly developing areas of new technology.

BLACK HISTORY MONTH

Again this year, a series of events is scheduled at Beltsville to commemorate "Black History Month" this February. A number of exhibits and displays are planned for throughout the month. In addition, a list of guest speakers has been arranged to address employees in the Auditorium of Building 003 at different occasions. Mike Causey, columnist of the Washington Post will speak on February 2; Dr. Benjamin Alexander, President of the University of the District of Columbia, is scheduled for February 9; and Dr. H. Marc Cathey of ARS will speak on February 22 on "Living Legends from Africa." Note these dates on your calendar. Thelma Vandross (BARC), and Armando Fernandez (NAL), have taken the leadership in planning these activities.

NAME CHANGE OF LABORATORY

Because of the changing nature of the research program within the Applied Plant Pathology Laboratory, the word "Applied" has been dropped from the title. The name of the Laboratory now is simply the Plant Pathology Laboratory, PPI. A. Graves Gillaspie, Jr., is continuing as Chief of the Laboratory.

ORGANIZATION SIGNS

Over the past few years, a new system of signs has been developed to identify organizational units in buildings at the Center. These signs have removable panels that can be moved as laboratories and other management units are relocated on the Center. All new signs should be either installed or be in the planning stage as of this date. If the sign for your organizational unit is not installed or has not been planned, please call and discuss this with John Fleming, Head of the Visitor Unit. His phone number is 344-2403.

AWARDS AND HONORS

Cash Awards:

Bragg, Louise H., Chairman's Office, IIBIII. (Sustained superior service in assisting in the management of the identification reporting system in the IIBIII taxonomic services program.)

Frazier, L. C., Plant Stress Laboratory, PPHI. (Dedicated service in preparing numerous histological specimens required to evaluate morphological factors modifying plant stress physiology.)

Murphy, William L., Chairman's Office, IIBIII. (Developing entirely new and efficient procedures for obtaining translations, in many languages, of diverse technical publications for all scientists in IIBIII, and for obtaining numerous such publications.)

Perry, Alphonzo L., Utilities and Services Branch, Division of Operations. (High performance in requisition of parts and materials for BARC vehicle fleet.)

Quality Increase:

Cohen, Sherry A., Insect Physiology Laboratory, PPI. (Highly competent and dependable performance during a critical period of transition for the laboratory.)

VISITOR UNIT QUARTERLY TABULATION:

During the quarter ending December 31, 1982, the Visitor Unit reports the following information:

No. of Visitors	High Level/Professional Groups/Individuals	Students	Other	Countries Represented
4,711	777	1,214	2,720	36

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 143 February 1983

TALLENT NAMED REGIONAL ADMINISTRATOR

Dr. William H. Tallent, Director of the Northern Regional Research Center in Peoria, Illinois, has been selected as Regional Administrator for the Northeastern Region of ARS. Dr. Terry B. Kinney, Jr., the ARS Administrator, announced this new appointment on February 15 and indicated that Dr. Tallent will report to his new position in Beltsville on March 7. Dr. Tallent replaces Dr. Steven C. King, who retired in 1982.

Dr. Tallent received his B.S. and M.S. degrees in chemistry from the University of Tennessee. He earned a doctorate in biochemistry at the University of Illinois in 1953. He later worked at the NIH, G. D. Searle and Company, and then joined ARS. He has been Director of the ARS Northern Regional Research Center since October 1975. His research in ARS included a broad search for potential new crops among previously uncultivated plant species. He is the author or coauthor of some 50 scientific publications.

FOCUSING ON THE FUTURE

On February 16 and 17, Dr. Terry B. Kinney, Jr., the Administrator of ARS, held a series of briefings with representatives of the Congress, Executive Departments, State Cooperators, and private industry to present the long-range strategic plan that will guide the Agency over the next 6 years. At the same time, copies of two publications were distributed to all scientists and managers within ARS: the ARS Program Plan, and the 6-Year Implementation Plan, 1984-1990.

These are extremely important documents for scientists in ARS. They identify priority areas for the research programs to focus on during the immediate future. The 6-Year Implementation Plan also specifies those programs that will be given decreased emphasis during the years ahead.

I urge each scientist at Beltsville to study carefully the priorities, targets, and directions that are outlined in these publications. Dr. Kinney and managers in ARS are committed to the changes which have been presented. As you plan new programs and revise current or expiring CRIS projects, work closely with your research leaders, the Director's Office, and the National Program Staff to ensure that your future activities are consistent with the highest priority thrusts identified by the Agency.

The proposed changes provide us with an opportunity to plan our research with clearly focused Agency priorities. Let's take advantage of the new opportunity available.

NEW LABORATORY CHIEF IN HYDROLOGY

Albert Rango has been appointed Chief of the Hydrology Laboratory, Plant Physiology Institute, and assumed his new duties on February 22. His career began as a graduate assistant in the Department of Meteorology at Pennsylvania State University in 1965, working on cloud seeding, rain gauge networks, and meteorological radar. After receiving his M.S. degree in meteorology in 1966, Dr. Rango became a graduate assistant in the Watershed Management Unit at Colorado State University in 1967, working on surface modifications of high alpine snowfields using long-chain alcohols and carbon black. He also had research assignments as a consultant with E. G. & G., Inc., of Boulder, Colorado. Upon obtaining his Ph. D. degree in watershed management in 1969, he accepted a position as Assistant Professor of Meteorology at Pennsylvania State University. There, in addition to teaching graduate courses in hydrology, snow hydrology, and bioclimatology, his research focused on fluvial geomorphology studies on forested watersheds and radar studies of snow.

Dr. Rango started his Government career in 1972 at NASA's Goddard Space Flight Center. He dealt with use of visible and near-infrared space data from Landsat with later emphasis on microwave applications. He became senior research hydrologist and team leader for hydrology in 1976, and in 1980 was appointed Head of the Hydrology Sciences Branch. Major research programs included soil moisture monitoring, snowpack properties assessment, evapotranspiration estimation, and hydrological modeling.

LABORATORIES MERGED

The Economic Botany Laboratory has been merged into the Germplasm Resources Laboratory of the Plant Genetics and Germplasm Institute (PGGI). James A. Duke will serve as Chief of the restructured research unit. The merger of these two laboratories improves management efficiency by the creation of a research unit with eight research scientists instead of two units with four each. The research and program mission of the two units are compatible and are properly described by the title "Germplasm Resources Laboratory."

The Glenn Dale Plant Introduction Station has been removed from the Germplasm Resources Laboratory and placed under the direct supervision of the Institute Chairman, PGGI. The Glenn Dale Station traditionally has operated largely as an independent unit. Removing the Station from the Germplasm Resources Laboratory will provide a more direct line of communication with the Institute Office. Bruce Parliman is serving as the Acting Leader at Glenn Dale.

MOLECULAR BASIS FOR VAPOR TRANSPORT REAPPRAISED

A traditional assumption about the movement of gases and the dispersion of vapor in our atmosphere will probably have to be revised based upon recent observations of scientists at Beltsville and University of Maryland. After 3 years of careful research on mixtures of pesticide vapors, the scientists

concluded that vapor movement depends not only on air currents but also on the weight and size of the molecules involved. Dwight E. Glotfelty and Alan W. Taylor of the Soil Nitrogen and Environmental Chemistry Laboratory, and William H. Zoller of the University of Maryland Chemistry Department reported in the February 18 issue of Science that the discovery has "major implications in micrometeorology, atmospheric chemistry, and air pollution."

The team discovered the unexpected behavior of vapors while conducting experiments to measure how much pesticide vaporizes after the compounds are applied in the field. They worked with six pesticides having a range of molecular weight and sizes. The scientists sampled and analyzed more than 3,000 samples of airborne pesticide vapors at heights between 2 inches and 6 feet above groundlevel and found that the pesticides were separating from one another in an unexpected way. After double-checking and discounting several other factors that might account for these intriguing results, they concluded that the pesticides with smaller molecules had risen through the sampling zone faster than the larger ones.

Scientists have long known that small, light gas molecules diffuse faster than large, heavy ones. But because wind currents carry gaseous molecules 1,000 to 10,000 times faster than they can move under their own power, classical theories have assumed diffusion did not play any significant role in the atmospheric movement of gases. It now appears that molecular weight and size make a significant contribution to the dispersion of vapors in turbulent air.

The new theory, undoubtedly, will be controversial and will have to be verified by other researchers; but, if verified, earlier views about the way gases disperse in the atmosphere will need to be radically revised.

The discovery, if substantiated, will "require a change in the way we think about the properties and behavior of that thin layer of the atmosphere near the Earth's surface where we live, breathe, and grow our crops," according to Dr. Glotfelty.

INTERNATIONAL COOPERATION IN BIOTECHNOLOGY

Robert M. Faust, Insect Pathology Laboratory, PPI, has agreed to serve as a cooperating scientist on a biotechnology project under a 3-year grant from the Office of International Cooperation and Development (OICD) to Dr. Kunthala Jayaraman, Madurai University, India. Dr. Jayaraman is Head of the Department of Molecular Biology and a leading scientist in recombinant DNA methods. This grant from OICD evolved from a joint India/USA subcommission meeting held last June in Washington, D.C., to establish priorities in agriculture of mutual benefit to both countries.

Recombinant DNA was identified as an example of biological technology that is of great importance. Dr. Jayaraman's research seeks to maximize the production of a biocide, that is a specific toxin against mosquito larvae, from bacteria by a combination of physical and recombinant DNA methods. This biocide is effective

in killing mosquito larvae without harming fish, birds, or other animal life. The successful completion of this research will be important in reducing the mosquito population by substituting a natural biocide for synthetic chemicals currently in use.

VISITING SCIENTIST

Insect Identification and Beneficial Insect Introduction Institute:

Mr. Huo Shaotang of Shaanxi Academy of Agricultural Sciences, People's Republic of China, arrived at BARC on January 10 to spend a year working on biosystematics of the parasitic wasp Trichogramma with Akey C. F. Hung, Beneficial Insect Introduction Laboratory. Mr. Huo will also study the taxonomy of pteromalid wasps with E. E. Grissell, Systematic Entomology Laboratory.

PERSONNEL

Employee Activities:

Robert H. Miller, Chief, Milk Secretion and Mastitis Laboratory, ASI, has been appointed to the Section on Agriculture, American Association for the Advancement of Science, representing the American Genetic Association.

Cash Awards:

Beverley, William J., Utilities & Services Branch, Division of Operations. (Superior performance as a Boiler Plant Equipment Mechanic of the Maintenance & Operation Unit.)
Blackstone, Frederick, Utilities & Services Branch, Division of Operations. (Superior performance as a Utility System Repair Operator of the Maintenance & Operation Unit.)
Fix, Raymond J., Chairman's Office, Animal Parasitology Institute. (Continued outstanding performance in the handling and care of animals.)
Hall, Franklin R., Utilities & Services Branch, Division of Operations. (Superior performance as Supervisor of Heating Plant Group No. 1, and as Acting General Foreman, Utilities Section.)
Hall, Peggy F., Horticultural Crops Quality Laboratory, HSI. (Sustained superior performance of clerical duties and excellent service in enhancing postharvest research of horticultural crops.)
Johnson, Tommie L., Plant Hormone Laboratory, PHI. (Continued willingness to learn new sophisticated skills in performing duies as a Biological Laboratory Technician.)
Pati, Julia A., Chemicals Coordination Unit, AEI. (Sustained superior performance in the computerization of the chemical data base for the evaluation of agricultural chemicals.)
Sessions, Delores E., Plant Hormone Laboratory (PHL), PPHI. (Continuous high quality secretarial support and devotion and especially the willing service to the PHL during the leadership transition of 1981 and 1982.)
Young, Kenneth W., Livestock Insects Laboratory, AEQI. (Outstanding performance in providing extra effort and skill in expediting the analyses of hplc samples.)

Quality Increases:

Ballantyne, Ann M., Germplasm Resources Laboratory, PGGI. (Sustained high performance for two consecutive years.)
Enkiri, Nancy K., Biological Waste Management and Organic Resources Laboratory (BWM&ORL), AEQI. (Improving the quality of the research of the BWM&ORL by providing outstanding support for microbiological research and the statistical analysis of data.)
Fellows, Margaret W., Visitor Unit, BARC Director's Office. (Contributed greatly to the effectiveness of the Visitor Unit by solving difficult problems with dignity, persistence, and patience.)
Flook, James P., Milk Secretion & Mastitis Laboratory, ASI. (In appreciation for the development of antisera to bovine immunoglobulins of superior quality and quantity and for adapting them for use in a highly sensitive enzyme assay.)
Garner, L. Grace, Germplasm Resources Laboratory, PGGI. (Sustained excellence in the overall operation of the PI computer documentation system.)
Graham, Caroline E., Nonruminant Parasitic Diseases Laboratory, API. (Superior performance in the development and implementation of hybridoma laboratory.)
Mathis, Eric Steven, Economic Botany Laboratory (EBL), PGGI. (Effectively assuming new responsibilities for automated data processing in the EBL, mastering techniques in data entry and management, and performing the relevant tasks in a cheerful and outstandingly effective and efficient manner.)
Melnick, Rita L., Nonruminant Parasitic Diseases Laboratory, API. (Outstanding performance in duties as Laboratory Chief's secretary.)
Monahan, Thomas P., Engineering and Planning Branch, Division of Operations. (Superior performance as a Construction Representative for the Beltsville Agricultural Research Center.)
Norris, Rebecca A., Germplasm Resources Laboratory, PGGI. (Sustained high quality performance in PI data documentation and related activities.)
Pilitt, Patricia A., Parasite Classification and Distribution Unit, API. (Sustained high level productivity in support of research in parasite systematics.)

VISITORS

German Democratic Republic (GDR)--Professor Doctor Karl-Heinz Schultz, First Secretary of Agricultural Affairs for the Embassy of the GDR, visited Gerald E. Coe, Research Geneticist, Field Crops Laboratory, PGGI, on January 20. The background of the sugarbeet work and its relationship to the Sugarbeet Foundation and USDA was discussed.

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

UNITED STATES DEPARTMENT OF AGRICULTURE
SCIENCE AND EDUCATION ADMINISTRATION

FEDERAL RESEARCH
NORTHEASTERN REGION
BELTSVILLE, MARYLAND 20705

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 144

March 1983

BELTSVILLE SYMPOSIUM IN AGRICULTURAL RESEARCH

The Beltsville Symposium VIII "Agricultural Chemicals of the Future" is scheduled for May 16-19. Dr. Terry B. Kinney, Jr., Administrator, will be the banquet speaker on Wednesday evening, May 18, at the Adult Education Center of the University of Maryland. Registration forms are available from James L. Hilton, Chairman, AEQI. Registrations should be sent to J. David Warthen, Jr., Room 323, Building 306, BARC-East.

MONOCLONAL ANTIBODY TECHNOLOGY

Scientific critics from outside of agriculture periodically raise the question as to whether our research programs are truly basic and whether our technological contributions are on the "cutting edge" of science. These are reasonable questions, and we all need to be prepared to respond rationally when these issues are raised. I would like to share with you, therefore, some recent information on work at the Center on immunology of mastitis in dairy cattle. This is a serious and continuing problem for the dairyman, and I am pleased to report that our work at the Center is in the forefront of efforts to address this problem.

Albert J. Guidry, Milk Secretion and Mastitis Laboratory, ASI, recently summarized the status of our work on bovine mastitis. He noted that methods currently available for studying the immune system are extremely sensitive. A unique property of most of these methods is that antibodies are responsible both for their specificity and sensitivity. In adapting these various methods to the study of bovine mastitis, he found that needed antisera and immunoglobulins were either not available or of such poor quality that they were not useable. Ordinary antisera contains heterogeneous mixtures of antibodies (polyclonal) and requires extensive purification.

In recent years, a new "hybridoma" technology has been developed in biomedical research. This technique consists of creating viable somatic cell hybrids to produce "monoclonal antibodies." The cells are hybrids of a spleen cell (to produce antibody) and a myeloma cell (to enable the hybrid to survive under laboratory conditions). When the animal donating the spleen cells has been immunized with the antigen being studied (bovine immunoglobulin, hormone, bacterial component, etc.) the antibodies produced are specific for a single site on the antigen molecule. This is because the hybrid cell and its daughter cells trace to a single spleen cell, hence monoclonal. The submolecular specificity of the monoclonal antibodies gives greater depth to our search for the molecular answers to mysteries of the immune system. Also, once a monoclonal is produced, it can be frozen and reactivated as the need arises for antisera; whereas, producing additional polyclonal antisera necessitates starting almost from "ground zero" with the purification process.

Dr. Guidry's work, in cooperation with Drs. S. Srikumaran and R. A. Goldsby at the University of Maryland (now at Amherst University), has resulted in three bovine x mouse hybrids, each secreting a class of bovine immunoglobulin (antibody). Dr. Guidry and his cooperators were also successful in producing the first monoclonals to bovine neutrophils and to B_2 microglobulin, a protein of interest to geneticists studying the major histocompatibility system.

Dr. Guidry reports that numerous inquiries have been received from laboratories throughout the U.S. and the world concerning these bovine immunological reagents. Requests have come from universities, Government institutions, and research foundations conducting basic research in human medicine, as well as from other agricultural research institutions. Dr. Guidry and his colleagues have been widely consulted concerning production methods, the ways in which we intend to use these reagents, and the possibility of conducting cooperative research. A recent report on this research, "Monoclonal Bovine Immunoglobulin from Bovine x Mouse Hybridomas," has been accepted for publication in Science. This is an example which shows that research in ARS and at Beltsville continues to be on the "cutting edge" of science.

NEW CHIEF IN MYCOLOGY

Amy Y. Rossman has been appointed Chief of the Mycology Laboratory, PPI, and assumed her new duties on February 22. Her career began as a graduate student in the Department of Botany and Plant Pathology at Oregon State University, in 1968, working on the biology and taxonomy of pyrenomycetous fungi both in the Pacific Northwest and in the Neotropics. After receiving her Ph. D. degree in mycology, Dr. Rossman worked for the Forest Service studying the effects of ozone on leaf surface microorganisms of douglas fir and red alder. She also completed a study of the cryptogamic plants of a relatively undisturbed grassland preserve in eastern Oregon, where she documented the importance of nitrogen-fixing lichens in supplying fixed nitrogen to this nutrient-poor ecosystem. Following her interest in the taxonomy of Ascomycetes, she worked as a postdoctoral fellow at Cornell University with Dr. Richard P. Korf, and then at the New York Botanical Garden with Dr. Clark T. Rogerson. Her studies centered around the genus Nectria and its anamorphic states, particularly Cylindrocladium, Cylindrocarpon, and Fusaria. She has determined several connections between sexual and asexual states of one species by collecting unusual fungi in the field and growing them in the laboratory.

Dr. Rossman's career at Beltsville started in 1980 when she accepted a position as the mycologist for the Animal and Plant Health Inspection Service (APHIS). In that job she identified fungi of plant quarantine significance and advised APHIS officials and plant pathologists on fungi which might threaten U.S. agriculture. Her research programs in ARS include the taxonomy and nomenclature of plant pathogenic fungi--particularly Ascomycetes--sexual and asexual connections in fungi, and the fungi parasitic on rusts and insects.

RESEARCH ASSOCIATE AWARDS FOR 1983

I am pleased to report that scientists at the Center fared very well this year with their proposals for the ARS Research Associateship Program. Dr. T. B. Kinney, Jr., the ARS Administrator, selected 16 proposals for funding in 1983. Four of the 16 awards went to scientists at Beltsville. The awards to BARC scientists were for the following proposals:

"Electrofusion for gene transfer in plants" - Lowell D. Owens, Cell Culture and Molecular Genetics Laboratory, PPHI.

"Novel uses of a transposable-like sequence in soybean DNA" - Lila O. Vodkin, Seed Research Laboratory, PGGI.

"Modification of CARNA 5's bioregulatory properties using recombinant DNA techniques" - Jacobus M. Kaper, Plant Virology Laboratory, PPI.

"Modulation of growth by interaction of hormonal growth regulators, nutrition and parasitism" - a joint proposal by Ronald Fayer, Ruminant Parasitic Diseases Laboratory, API, and Andrew Hammond and Theron Rumsey, Ruminant Nutrition Laboratory, ASI.

Dr. W. H. Tallent, the Regional Administrator, extended congratulations to these scientists and noted that "These selections reflect the very high caliber of BARC scientists serving the Department and all of U.S. Agriculture."

I join Dr. Tallent in congratulating those who were successful with their proposals this year. In addition, I express my deep appreciation to all of the BARC scientists who prepared and submitted proposals for consideration. I have been advised that the competition was stiff and the final decisions were close. Many meritorious projects could not be funded because of the limited positions available. I encourage you who were not successful this year to look forward to the opportunity to participate in this excellent program in 1984.

POSTDOCTORAL SCIENTISTS

In addition to our regular staff of 370 permanent full-time research scientists, over 40 temporary postdoctoral research scientists also work here at the Center. A variety of funding mechanisms are used to support these researchers, including funds from the ARS Administrator, the Regional Administrator's Office, the Competitive Grants Program, foundations, and other organizations. In many cases, postdocs are funded by the research laboratories through a cooperative arrangement with a university or State agricultural experiment station. These postdoctoral scientists (along with an additional 60 to 70 visiting scientists) are a great asset to the overall ARS research effort. We gain significantly from the insight and new ideas which they bring to the Center and the Agency.

VISITING SCIENTISTS IN THE SYSTEMATIC ENTOMOLOGY LABORATORY (SEL), IIBIII

Mr. Miloje Brajkovic, Research Associate, Institute of Zoology, University of Belgrade, Yugoslavia, will be spending 7 months with the SEL located in Washington, DC. Mr. Brajkovic will be doing a comparative morphological study of the genitalia and mouthparts of Braconidae (parasitic wasps) with Laboratory Chief, Paul M. Marsh.

Mr. Chen Jia-hua, Vice-Chief, Laboratory of Biological Control and Associate Professor, Fujian Agricultural College, People's Republic of China, arrived on January 10 to spend 1 year with the SEL at the Smithsonian location. Mr. Chen will be working with Dr. Marsh, and studying the classification of Braconidae and Aphidiidae (parasitic wasps).

NEW CELL SORTER ACQUIRED

The recent acquisition of a flow cytometer/cell sorter by the Reproduction Laboratory (RL), ASI, has significantly expanded our research instrumentation for studies in cell biology. This instrument, the first of its kind on the Center, can be used to analyze and sort cells or particles up to 40 μ that can be fluorescently tagged. Lawrence A. Johnson of the RL, in cooperation with colleagues at Oklahoma State University and the Lawrence Livermore National Laboratory in California, used this instrumentation for determining the ratio of Y (male) and X (female) chromosome-bearing sperm in a sample of semen. The DNA content of the fluorescent-stained sperm was quantified as it passed through a laser beam. The objective of Dr. Johnson's research is to be able to selectively breed for male or female progeny.

This new instrument is installed in Building 200 and is under the management of the Animal Science Institute. It is an expensive instrument, and we appreciate the ARS Administrator's Office assisting with this purchase by providing temporary unassigned program funds.

Research efforts on sex selection, sperm physiology, immunology, and monoclonal antibodies will benefit significantly as a result of this new acquisition. Since this is the first instrument of its kind on the Center, other BARC researchers may wish to determine its capability in their area of research by meeting with Dr. Johnson.

SNYDER SALUTED BY SUGAR INDUSTRY

Freeman W. Snyder, Plant Physiologist, Light and Plant Growth Laboratory, PPHI, received the Meritorious Service Award from the Beet Sugar Industry of America, at the 22d general meeting of the American Society of Sugar Beet Technologists, in Phoenix, Arizona, in February. His research on sugar beets and Society activities were cited as the bases for the award. Dr. Snyder is widely respected for his research on partitioning of photosynthetic products in sugar beets and other crops. His studies have shown, for example, that selection for a high taproot-to-leaf weight ratio (TLWR)

increases the yield of sugar beets. High TLWR hybrids yielded 10 to 15 percent more sugar than the unselected hybrid. This method of selection has attracted international interest and is being examined in at least five European countries.

ARABIC ACAROLOGY

Edward W. Baker, Systematic Entomology Laboratory, IIBIII, has been notified that Part I of the book "Mites Injurious to Economic Plants," by L. R. Jeppson, H. H. Keifer, and E. W. Baker (1975, University of California Press, 614 pp., 75 plates), has been translated into Arabic by Dr. Jalil Abul-hab of the Department of Plant Protection, University of Baghdad, Iraq. This benchmark publication covers all aspects of plant pest mites on a worldwide basis.

In the past few years, the Arab-speaking countries have become aware of the importance of agricultural mites, largely through the efforts of Dr. Baker, and many of their universities are now offering courses in acarology. This translation provides students and fieldworkers with a textbook for the study of the systematics, biology, and chemical and integrated control of plant pest mites. It is intended for free distribution to the students.

AWARDS

Cash Awards:

Archer, Cissel L., Utilities & Services Branch, Division of Operations. (Superior performance as General Foreman, Utilities Section.)
Brocht, Paul E., Farm Management Branch, Division of Operations. (Outstanding performance of assigned duties in the Roads & Grounds Section of the Farm Management Branch, BARC.)
Enzian, Preston A., Farm Management Branch, Division of Operations. (Outstanding performance of assigned duties in the Research Plots Section of the Farm Management Branch, BARC.)
Espenshade, Patricia A., Chairman's Office, IIBIII. (Leadership in the development and documentation of a detailed and highly effective Standard Operating Procedures Manual, ensuring the safety of the IIBIII computer system.)
Harris, Russell W., Plant Pathology Laboratory, PPI. (Maintaining a high level of performance over a 5-year period, for contributing significantly to seven publications and to three additional papers in preparation, and for service above and beyond your position description in maintenance of laboratory equipment.)
Johnson, Katherine S., Horticultural Crops Quality Laboratory, HSI. (Outstanding achievement in the study of bacterial proteins by two-dimensional polyacrylamide gel electrophoresis.)
Lance, B. Lynne, Chairman's Office, ASI. (Exceptionally high level of performance as Clerk-Typist in Chairman's Office, ASI, in addition to support provided several laboratories in Institute.)
Miller, Victor L., Farm Management Branch, Division of Operations. (Outstanding performance in directing the Youth Conservation Corps activities at BARC.)

Cash Awards: (Continued)

Taylor, Margaret H., Chairman's Office, IIBIII. (Sustained superior service in effectively and professionally managing a diversity and plethora of highly complex secretarial activities in the IIBIII office.)
Thomas, Joseph W., Farm Management Branch, Division of Operations. (Outstanding performance of assigned duties in the Roads and Grounds Section of the Farm Management Branch, BARC.)
Urban, Joseph F., Jr., Nonruminant Parasitic Diseases Laboratory, API. (Superior achievement in developing an in vitro culture system for larvae Ascaris suum that permits the collection of metabolic protective antigens.)

Quality Increases:

Fordham, Ingrid M., Fruit Laboratory, HSI. (Superior performance of duties resulting in significantly greater productivity in the fruit tissue culture research program.)
Mason, Joyce A., Fruit Laboratory, HSI. (Superior performance of duties resulting in greater efficiency in the Fruit Laboratory office operations.)

BARC COMMITTEE CHANGE

Gudrun M. Christenson, Plant Exploration and Taxonomy Laboratory, replaces Lila O. Vodkin as PGGI representative on the BARC EEO Advisory Committee.

SURPLUS EQUIPMENT

Item	Condition	Contact	Phone
Scale, platform, livestock, 3,000 Lbs., Serial #S6122	Fair	G. F. Shaffer	344-2080
Scale, animal sure weight M800, Serial #S812204	Fair	G. F. Shaffer	344-2080
Typewriter, Remington, Serial #41196495	Fair	G. F. Shaffer	344-2080
Typewriter, Olympia, Serial #7-256184	Fair	G. F. Shaffer	344-2080

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 145 April 1983

NEW CAFETERIA OPEN

A new cafeteria facility is now open in the basement of Building 002. This new facility replaces the former cafeteria which was operated under the greenhouse in Range 2 for many years. The greenhouse cafeteria is now closed.

BREAKTHROUGH IN PRODUCTION OF SPORIDESMIUM

A few years ago, Peter B. Adams and William A. Ayers of the Soilborne Diseases Laboratory (SDL), PPI, discovered an unusual dematiaceous hyphomycete on sclerotia of the important soilborne pathogen Sclerotinia. The mycoparasite, described as Sporidesmium sclerotivorum, was shown to reduce populations of the pathogen and disease in the field by 63-83% in two consecutive years with a single soil treatment. Drs. Ayers and Adams were awarded a U.S. patent for the new mycoparasite and its method of culturing.

Although the nutritional requirements and the method of culturing were studied in the laboratory, several industrial firms were unable to grow the organism under liquid fermentation conditions. Recently, the Butler County Mushroom Farm, Inc., Worthington, Pennsylvania, successfully developed a solid fermentation process whereby Sporidesmium is grown in commercial quantities to be used as a biological control agent for various diseases caused by Sclerotinia ssp. The company will apply for a nonexclusive license to produce this biological control agent.

The successful growth of Sporidesmium by an industrial firm is a major advance in ARS' efforts not only to do basic research on mycoparasitism, but also to develop the means and the technology for disease suppression. George C. Papavizas, Chief, SDL, reports that the next step is to work with the industry for pilot testing the Sporidesmium preparation against several Sclerotinia diseases.

DAVIS RECEIVES AWARD

Robert E. Davis, Plant Virology Laboratory, PPI, is the 1983 recipient of the Washington Academy of Sciences Award in the biological sciences. This award is given annually to a scientist in the Metropolitan area who is under 40 years of age and who has distinguished himself/herself internationally.

Dr. Davis was the first to discover a new category of disease-causing microorganisms which he named "spiroplasmas," after their helical structure. He developed new and sensitive diagnostic procedures for spiroplasmas, amassed evidence that these agents infect insect vectors as well as plants, and proposed the first taxonomic classification of spiroplasma.

Dr. Davis has authored approximately 75 scientific articles, and was selected in 1982 by Cornell University as the Professor Dimock Memorial Lecturer. He is also the coholder of a patent on a liquid density gradient zone electrophoresis apparatus with Russell L. Steere, Chief of the Plant Virology Laboratory.

TAYLOR'S CONTRIBUTIONS RECOGNIZED

The University of Maryland Department of Agronomy presented its Outstanding Service Award to Alan W. Taylor for his contributions to Maryland agriculture. Dr. Taylor is Chief of the Soil Nitrogen and Environmental Chemistry Laboratory, AEQI. The basic research program conducted by the laboratory emphasizes management of agricultural chemicals, especially in minimum tillage agriculture, and has included research sites in a number of Eastern States. The award presentation by Dr. James R. Miller, Chairman of the Department of Agronomy, especially mentioned Dr. Taylor's leadership and research contributions to studies on the impact of agricultural practices on the Chesapeake Bay ecosystem and research on minimum tillage. Dr. Miller stated that no-tillage means more to the State of Maryland than any other practice; that it has reduced erosion nearly 90 percent; and that Maryland is the number one user of no-till agriculture.

INVENTORS RECEIVE INCENTIVE AWARDS

The Commerce Department works closely with the USDA to encourage private sector use of ARS inventions through the incentives of patent licensing. A special incentive awards program has been developed to recognize and reward Federal employees for inventive work which is commercially promising.

On April 28, 1983, a special awards program was held at the Center to recognize six BARC scientists who have had the commercial rights to their Government patents successfully licensed to private industry. These six inventors are: Martin Jacobson, AEQI, for patent on antifeedant for boll weevils, licensed to BioSystems Research, Inc.; Meyer Schwarz and Richard Miller, AEQI, for patent on insect maturation inhibitors, licensed to Stauffer Chemical Company; Malcolm Thompson amd Julius Feldmesser, PPI, for patent on control of nematodes and other helminths, licensed to Pennwalt Corporation; Terrance McGovern, AEQI, for patent on attractants for the yellow jacket wasp, licensed to Morgro Chemical Company.

Each inventor receives a certificate acknowledging his work and a cash award based on royalties. W. H. Tallent, the Regional Administrator, presented the certificates and congratulated the recipients for their contributions to the technology transfer process.

CONGRESSMAN HOYER VISITS BARC

On April 15, Congressman Hoyer, State Senators Green and Dorman, County Executive Glendening, County Council Chairman Casula, Delegates Maloney, Mooney, and Menes, and representatives from the metropolitan governments of Greenbelt, Laurel, Berwyn Heights, College Park, and the Beltsville Citizens Association visited the Beltsville Agricultural Research Center and were welcomed by P. A. Putnam. They toured the Center and were informed about tissue culture orchards by Miklos Faust; animal research by Norman Hooven; and entomology research by Suzanne Batra. They then returned to the Director's Conference Room for a press conference which was attended by members of the

media from TV's Channel 5, The Washington Post, Greenbelt News, and the University of Maryland newspaper. It was an excellent opportunity for our elected representatives to get a brief look at the research being performed at BARC.

BRITISH PARLIAMENT VISITS BELTSVILLE

Eight members of the British Parliament took a full day's tour of the Beltsville Agricultural Research Center. They were accompanied by Dr. Orville G. Bentley during the first half of the day. Drs. T. B. Kinney and W. H. Tallent were present during the luncheon period at the Log Lodge. Presentations to the group were made by Paul A. Putnam, William H. Tallent, Karl H. Norris, Miklos Faust, and Donald Terriault during the morning session; while after-luncheon presentations were made by Frank Dickinson, Howard Opel, Vernon Pursel, Paul Moe, and Henry Tyrrell. It was reported that the members were pleased with the tour--especially with the fact that Audrey Brown, a British citizen, is doing her graduate studies at the Center in the Ruminant Nutrition Laboratory.

VISITING SCIENTIST IN THE PLANT HORMONE LABORATORY (PHL), PPHI

Dr. Edo Chalutz, a Plant Pathologist-Physiologist and former Head, Division of Fruit and Vegetable Storage, Volcani Institute, Israel, is a senior research associate in the PHL, through a cooperative agreement with the Department of Horticulture, University of Maryland. He is also the cooperating scientist on an ongoing BARD grant. Dr. Chalutz has been elected Head of the Institute of Technology and Storage of Agricultural Products which is one of seven Institutes in the Agricultural Research Organization (Israel). Election to this new position by his peers and colleagues reflects the respect they have for Dr. Chalutz' ability as a leader and administrator. Dr. Chalutz is currently doing research in the PHL concerned with the role of ethylene induction in host-parasite interactions and will be going back to Israel to assume his new duties in late September 1983.

DISSERTATION COMPLETED

On April 1, 1983, Carol P. Durham, Nonruminant Parasitic Diseases Laboratory (NPDL), API, passed her final oral exams and successfully defended her Ph. D. dissertation in the Department of Zoology, Howard University. Dr. Durham's research was carried out in the NPDL, API, under the direction of K. Darwin Murrell. Dr. Durham was directed at Howard University by Dr. Clarence Lee. Dr. Durham's research was on the isolation and characterization of a protective antigen from Trichinella spiralis. Her work is currently being expanded to evaluate the antigen as a skin test antigen for swine trichinosis.

AWARDS

Cash Awards:

Billhimer, Ronald E., Animal Production and Management Unit, API. (Continuous outstanding performance as Animal Caretaker and for exemplary maintenance of farm equipment.)

Gurtshaw, William J., Soilborne Diseases Laboratory, PPI. (Special Achievement Award for isolating, purifying, and assaying survival structures (chlamydospores) of the biocontrol fungus Trichoderma and for his devotion to ecological research on the fungus.)

Hobbs, George A., Farm Management Branch (FMB), Division of Operations. (Outstanding performance in carrying out the duties of Foreman in the Roads & Grounds Section of the FMB.)

Jamison, Elaine B., Systematic Entomology Laboratory (SEL), IIBIII. (Sustained superior service in data manipulation in support of the Coleoptera Catalog project in the SEL research program.)

Keithley, Paulette E., Plant Hormone Laboratory (PHL), PPHI. (Continuous high quality secretarial and clerical support to the PHL during the leadership changes of 1981 and 1982.)

Quality Increases:

Colbert, Larry I., Ruminant Nutrition Laboratory (RNL), ASI. (Outstanding performance of duties as a Biological Laboratory Technician (Animal) to the RNL.)

Richards, Gladys S., BARC Director's Office. (Outstanding assistance in implementing new word processor system and serving as a key person for the new electronic mail system in the BARC Director's Office.)

RESEARCH APPRENTICE - SCIENCE FAIR WINNER

Kenneth E. Bolding, a student at Gonzaga High School and an ARS Research Apprentice with James P. San Antonio, Vegetable Laboratory, HSI, last summer, won the Grand Prize in this year's D.C. Science Fair for his microbiology project "Mushroom Genetics." Ken was awarded an all-expense paid trip to Albuquerque, New Mexico, May 8-15, to compete in the International Science and Engineering Fair.

VISITORS

District of Columbia--Dr. Wallace E. LaBerge, Program Director for Systematic Biology, National Science Foundation (NSF), (1982-83) visited Lloyd Knutson, Chairman, IIBIII, and staffs of the Systematic Entomology Laboratory (SEL) and Beneficial Insect Introduction Laboratory (BIIL) on February 22. Dr. LaBerge was given an overview of the research program by several SEL and BIIL scientists, and discussed taxonomic research and services for bees with Paul M. Marsh, Chief, SEL, and Dr. Knutson. Dr. LaBerge, a specialist in the taxonomy of bees, is on an NSF detail from his home institution, the Illinois Natural History Survey, Urbana.

Illinois--The Illinois Agricultural Leadership Program visited BARC on Saturday, March 5. The group consisted of 30 outstanding production agricultural and agribusiness men and women who have demonstrated leadership skills. The all-day visit included stops at the Reproduction Laboratory, ASI; (Lawrence Johnson and Vernon Pursel); Ruminant Nutrition Laboratory, ASI (Henry Tyrrell); Nonruminant Parasitic Diseases Laboratory, API (K. Darwin Murrell); Fruit Laboratory, HSI (Miklos Faust); Vegetable Laboratory, HSI (Raymon Webb); Nitrogen Fixation and Soybean Genetics Laboratory, PPHI (Perry Cregan). At noon, following lunch at the Log Lodge, Paul A. Putnam, Director, greeted the guests and answered questions.

Italy--Mr. Giuseppe Gioia, President of the Sicilian Farmers Association visited BARC on March 28. George Pittarelli, Tobacco Laboratory, PGGI, assisted the Visitor Unit by acting as an interpreter. The general overview was presented by John Fleming.

Missouri--Fifteen District and Regional Sales managers of the DeLaval Agricultural Division, Alfa-Laval, Inc., Kansas City, Missouri, visited the Center on March 30, 1982. Norman Hooven, Robert Miller, Max Paape, Alan Lefcourt, and Henry Tyrrell hosted the group. The visitors were given an overview of the dairy management program, including the milking parlor facility, and current research on mastitis, milk secretion, and energy metabolism.

People's Republic of China (PRC)--Lloyd Knutson, Chairman, IIBIII, and Laboratory Chiefs Jack R. Coulson (Beneficial Insect Introduction), and Paul M. Marsh (Systematic Entomology) welcomed five PRC scientists to their offices on February 22. Dr. A. L. Steinhauer, Chairman, Department of Entomology, University of Maryland; Dr. Pedro Barbosa, Professor of Biological Control; and Dr. Michael C. Ma, Professor of Insect Physiology, accompanied the visitors. A brief description of the Institute programs and a tour of the Institute facilities was provided, followed by an overview of BARC research by Paul A. Putnam, Director.

Russia--On April 4 and 5, three scientists in the field of genetic engineering visited BARC under the auspices of the US/USSR Agreement in Cooperation in the Field of Agriculture. After a brief overview by P. A. Putnam, Director, the delegation, which was hosted by M. N. Christiansen, Chairman, PPHI, met with scientists from the Reproduction Laboratory, ASI, Florist and Nursery Crops Laboratory, HSI, and the Tissue Culture and Molecular Genetics Laboratory, PPHI, to discuss application of the principles of genetic engineering to research programs in agriculture.

GODDARD DIRECTOR VISITS BARC

Dr. Noel W. Hinners, Director, NASA-Goddard Space Flight Center, visited BARC on April 6 from 1-4 p.m. P. A. Putnam presented an overview of the Center and then research presentations were made by Karl Norris (Infrared Nondestructive Analysis); Al Rango (Remote Sensing); Miklos Faust (Fruit Tissue Culture); and Paul Moe/Henry Tyrrell (Energy Metabolism).

VISITOR UNIT QUARTERLY TABULATION

During the quarter ending March 31, 1983, the Visitor Unit reports the following information:

No of Visitors	High Level/Professional Groups/Individuals	Students	Other	Countries Represented
3,771	441	343	2,017	18

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 146 May 1983

WEBB RECEIVES SUPERIOR SERVICE AWARD

Raymon E. Webb, Chief of the Vegetable Laboratory, HSI, received the Superior Service Award from Secretary of Agriculture John R. Block during the Annual Departmental Awards Ceremony on May 18. Dr. Webb was cited for developing methods for breeding new varieties of vegetables that are genetically resistant to diseases. He developed disease-resistant spinach that stabilized the U.S. spinach industry; tomatoes that are excellent for canning and processing; and commercial potatoes that are resistant to six damaging diseases. 'Belrus,' a popular russet potato that may revitalize the potato industry in the northeastern U.S., was developed by Dr. Webb. His innovative breeding methods are used by plant breeders around the world.

BELTSVILLE SYMPOSIUM VIII

(Submitted by James L. Hilton, Chairman)

Beltsville Symposium VIII, Agricultural Chemicals of the Future, was held May 16-19, 1983, with 35 speakers, 29 posters, and 425 registered participants. Federal, State, and private sector scientists presented papers identifying future trends, new uses or concepts, and emerging problems in the use of herbicides, insecticides, fungicides, nematicides, growth regulators for plants, insects, and animals as well as chemicals for animal parasites, conservation tillage, and regulation of reproduction. The private sector was heavily represented in the audience. The banquet speech on "The Future of Agricultural Chemicals" was presented by Dr. Terry B. Kinney, Jr., Administrator of ARS, who emphasized the ARS Program Plan.

BARC appreciates the superb cooperation of the National Agricultural Library (NAL) for providing facilities and services for the Monday evening poster session, registration, and mixer. NAL also went the extra mile in providing a special display during the month of May on "Agricultural Chemicals." A new sound and projection booth system installed in the auditorium of Building 003 just in time for the symposium improved the overall quality of the speakers' presentations. Publicity and other feedback indicates that the Symposium VIII was an overwhelming success for which the symposium committee is to be congratulated.

PESTICIDE EFFICACY DECLINING IN SOME SOILS; MICROORGANISMS, THE SUSPECTS

In an increasing number of farm soils, repeated use of similar pesticides is stimulating a buildup of soil microorganisms that are capable of rapidly degrading these compounds, thereby reducing their effective life, according to Donald D. Kaufman, Pesticide Degradation Laboratory, AEQI. Speaking at the recent BARC Symposium on "Agricultural Chemicals of the Future," Kaufman reported that the problem came to light about 8 years ago when Midwestern corn farmers began reporting that insecticides used to control rootworm, and herbicides used against nutsedge and certain grasses, were not doing the job they were supposed to do. From 1978 to 1980, the number of farmers reporting a lack of efficacy rose tenfold and has continued to climb steadily.

Complaints also are beginning to occur with soybeans, vegetables, and other commodities where farmers use the same chemicals year after year. Insecticides, herbicides, fungicides, and fertilizers incorporated into the soil come in direct contact with the microorganisms. "A microorganism that adapts to utilize one chemical can quickly adjust to utilize a similar chemical," Kaufman explained. Certain pesticides can also trigger this adaptation in soil microorganisms without being utilized themselves.

Kaufman suspects that because many of these chemicals are formulated as slow-release granules they provide the microorganisms with a slow, steady "food" supply to keep their inflated populations going. In addition, the systemic pesticides, which become tied up in plant tissue, are released as the plants decompose. While the loss of control, in some instances, is due to the pests acquiring resistance, Kaufman and others are convinced that soil microbes are magnifying the problem by dismantling these pesticides well before their time.

Ultimately, manufacturers may have to change pesticide chemistry, but it will be years before unrelated products are on the market. Farmers can prevent or at least delay the loss of pest control by rotating both crops and pesticides. Further, they should check their fields or use State Extension or private services to make sure they indeed have a pest problem serious enough to warrant applying pesticides.

Kaufman is taking a close look at the microorganisms which account for the sudden loss of efficacy because he questions whether all of the bacteria, fungi, or actinomycetes that he finds elevated in problem soils are the real culprits. So far, he has found two classes of soil fungi, the Verticillia and the Fusaria, and several new bacterial species that are the most active decomposers of these pesticides.

Getting a handle on the soil microorganism-pesticide picture won't be easy; the interrelationships are complicated. Kaufman and others have found that certain pesticides actually block the breakdown of other pesticides in soil, thereby increasing their persistance. Chemical companies have begun to take advantage of this phenomenon and are combining inhibitory chemicals in their formulations to extend the active life of certain pesticides.

RESEARCH PROPOSAL SELECTED FOR EDMINSTER AWARD

Terry B. Kinney, Jr., the ARS Administrator, has announced that the 1983 Talcott W. Edminster Award for Research Associates will go to a Beltsville scientist, Lowell D. Owens, in the Tissue Culture and Molecular Genetics Laboratory, PPHI. Dr. Owens' proposal on electrofusion for genetically modifying plant cells was selected from among 189 research proposals submitted by ARS scientists nationwide. The funding provided by Dr. Kinney will enable Dr. Owens to hire a research associate for 1 year to explore this promising area of genetic engineering in agriculture.

Dr. Kinney also announced that 20 other research associates will be supported by the ARS Research Associate Program this year. A total of $735,000 has been set aside for this program, an increase of $315,000 over that available last

year. The aim of this new Agency-wide program is to broaden support for basic research, encourage new scientific talent, and attract the best qualified recently graduated Ph. D.'s into agricultural research.

OICD HONORS LEFFEL

Robert C. Leffel, Research Agronomist in the Nitrogen Fixation and Soybean Genetics Laboratory, PPHI, was selected by the Office of International Cooperation and Development (OICD) to receive a 1983 Special Honor Award. This award, which was presented at ceremonies on May 11, recognizes the outstanding contributions of Dr. Leffel to the U.S.-Spain Agricultural Research Program.

VOLUNTEER MAILMEN

Near the end of the day on May 3, 1983, two items of mail were observed on Route #1. Carlton Kinard and James Belt, Maintenance and Construction Branch, Division of Operations, recovered and returned the items to the sender. Upon investigation, it was found that the U.S. Postal Service had lost the items (two Federal Express parcels) and did not realize it until reaching the Post Office. Upon the return of the items to BARC, Mr. Matthews of our Mail Room then hand-carried the items to the Beltsville Post Office (May 4). The net result was that the alert and responsive actions of BARC employees assured the special items were recovered and properly delivered only 1 day late.

CASH AWARDS

Buschling, Robert D., Animal Operations Unit. (Sustained outstanding work performance in the care, feeding, and management of sheep assigned to nutrition experiments.)
Cooperman, Cynthia, Field Crops Laboratory, PGGI. (Modified a complex nuclear staining procedure which provided the only reliable method for distinguishing fungal pathogens in a grass disease complex.)
Dumond, Jon E., Animal Operations Unit. (Sustained outstanding work performance in the care, feeding, and management of sheep assigned to nutrition experiments.)
Johnson, Herbert L., Animal Operations Unit. (Sustained outstanding work performance in the care, feeding, and management of cattle assigned to nutrition experiments.)
Moore, Robert L., Nonruminant Parasitic Diseases Laboratory, API. (Sustained superior performance in the upgrading, design, and implementation of laboratory procedures that minimize error and increase efficiency.)

QUALITY INCREASES

Jones, Awdry W., Nonruminant Parasitic Diseases Laboratory, API. (Careful and efficient management of the research herd and organization of pictorial records of experimental results.)
Thurman, Jane L., Water Data Laboratory, PPHI. (Outstanding performance exhibited in the design, development, and documentation of data bank direct access procedures.)
Weiss, Viola C., Field Crops Laboratory (FCL), PGGI. (Sustained quality performance in providing clerical support to the FCL.)

VISITORS

Australia--Dr. Peter Waller (McMaster Laboratory), CSIRO, Sydney, visited the Animal Parasitology Institute on May 5-6, to discuss and exchange information on antihelmintic resistance in nematode parasites of sheep.

England--Dr. Martin W. Shirley, Houghton Poultry Research Station, spent a week at the Animal Parasitology Institute dong research on isoenzyme profiles of protozoan parasites.

India--On May 3, Professor O. H. Patel, Dean of the Technology and Engineering Faculty, Maharaja Sayajirao University of Baroda, Baroda, India, met with scientists in the Hydrology Laboratory, PPHI, concerning water control and management problems.

India--On April 20-26, Dr. V. S. Rama Das, Dean and Head, Department of Botany, Sri Venkateswara University, Tirupati, India, visited Beltsville following a U.S.-Australian Workshop on Stomatal Physiology held in Honolulu, Hawaii. He presented a seminar on "Foliar Regulation for Improved Water Use Efficiency," and visited several PPHI and PGGI scientists.

Maryland--Twenty-five students from the History Department of Montgomery College toured BARC on May 3. The visit was part of a class assignment regarding teaching world history through agriculture.

Maryland--Representatives from each county in Maryland's League of Women Voters visited BARC on May 24. They met with James F. Parr and John M. Taylor, AEQI, and then toured the Center.

SURPLUS EQUIPMENT

Item	Condition	Contact	Phone
Nuclide, single focus mass spectrometer	Good	A. C. Hammond	344-2281
Mettler, 160/g capacity analytical balance (2)	"	"	"

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 147 June 1983

THE BELTSVILLE/SMITHSONIAN CONNECTION

Many employees may not be aware that we have a major scientific program in the Natural History Museum at the Smithsonian Institution, Washington, D.C. This program is a part of our Systematic Entomology Laboratory (SEL), IIBIII, which has the largest group of research scientists (27) of any laboratory at BARC. With the exception of five scientists engaged in research at Beltsville on mites, aphids, and scale insects, the remaining SEL scientists are housed at the Smithsonian.

Taxonomic entomologists of the USDA and the Smithsonian have worked together closely and effectively for over 100 years. From the beginning of this cooperative association, the USDA and the Smithsonian have shared the common objective of developing the National Entomological Collections for research and reference. The Smithsonian Institution provides the space, cabinets, trays, and materials to preserve the collection of 24 million insect specimens. The USDA has provided about 85 percent of the scientific personnel used to develop and curate the collection. This National Collection of Insects is the largest in the Western Hemisphere and is an essential tool for the research and service responsibilities of SEL scientists.

Paul M. Marsh is the Chief of the Systematic Entomology Laboratory. We are pleased with the outstanding record of cooperation between USDA/ARS and Smithsonian entomologists over the past century of progress in American agriculture.

NEW TEST FOR SWINE PARASITE

Employing hybridoma technology, H. Ray Gamble, Nonruminant Parasitic Diseases Laboratory (NPDL), API, has produced a number of monoclonal antibodies against the parasite Trichinella spiralis, the causative agent of trichinosis. One of these monoclonal antibodies, $7C_2C_5$, was found to be specific for T. spiralis antigen and did not cross-react with other worm species commonly parasitizing swine. A drawback to the most widely used serological test for swine trichinosis, the ELISA, is its lack of complete specificity; this is especially important for the antemortem use of the ELISA currently being evaluated by the Food Safety and Inspection Service (FSIS). Dr. Gamble has made an important advance in improving the ELISA's specificity by using monoclonal $7C_2C_5$ to isolate an antigen, by affinity chromatography, for use in that test. In collaboration with K. Darwin Murrell, Chief, NPDL, the antigen is being field tested in the swine trichinosis epidemiology project being conducted jointly with the Schools of Veterinary Medicine at the University of Pennsylvania and the University of Minnesota.

COMPUTER CHEMISTRY

Computers are playing increasingly important roles in virtually every facet of science and technology. In synthetic chemistry, for example, scientists can use computer models to spot active compounds useful for the development of new agricultural chemicals.

Judith B. St. John, a Biochemist in the Weed Science Laboratory, AEQI, is investigating a group of compounds named pyridazinones. Thousands of possible variations in structure exist for these compounds, but only a few are likely to be useful in agriculture. Dr. St. John has cooperated with scientists at BASF in Germany in the synthesis and testing of the different pyridazinones. Based on the structure-activity relationships of 50 compounds, the computer predicted which structures would be most effective in altering the membrane lipids of plant cells.

Dr. St. John is especially interested in the biochemistry of membrane lipids because they affect the response of plants to temperature. Studies show, for example, that a shift in the lipid composition makes plants more sensitive to the cold and more resistant to heat stress. Thus, chemicals that alter the plants' response to temperature could be used to protect crops from unseasonable temperatures, or to make undesirable plants more susceptible to normal weather conditions.

Computer modeling is also a promising tool for predicting structure-activity relationships for other types of chemicals, according to St. John.

AWARDS

Cash Awards:

Ewing, Robert B., Parasite Classification and Distribution Unit, API. (Sustained high level production of scientific illustrations of superior quality.)
Lee, Edward H., Plant Stress Laboratory, PPHI. (Contributions that help to explain the roles of an antiozonant (EDU) and an enzyme (superoxide dismutase) in the prevention of air pollution injury.)
Pacifico, Carl, Maintenance and Construction Branch, Division of Operations. (Improving original design and new features and repair of existing apparatus requiring close precision work and unique application.)

EMPLOYEE ACTIVITIES

At the Annual Spring Meeting on May 12, James A. Saunders, Tobacco Laboratory, PGGI, was elected President-elect of the Washington Area Section, American Society of Plant Physiologists. The organization has approximately 300 members and holds three meetings each year. This appointment will be for 2 years; Dr. Saunders will serve as President during the second year.

Charles D. Foy, Plant Stress Laboratory, PPHI, presented an invitational lecture "Adaptation of Plants to Mineral Stress in Problem Soils" and participated in a symposium "The Origins and Development of Adaptation." The CIBA Foundation was sponsor for the conference held April 10-13 in London. A book of proceedings will be published in 8 months.

Martin Jacobson, Chief, Biologically Active Natural Products Laboratory, AEQI, received a Vocational Development Award from High Point Senior High School. Beltsville. The citation on the Certificate of Appreciation reads: "For providing work experience, occupational training and support, thereby making an important contribution to the education of young adults during the '82-'83 school year under the stay-in-school program."

Martin Jacobson, Chief, Biologically Active Natural Products Laboratory, AEQI, was an invited participant at the Second International Neem Conference, May 24-28, in Rauisch-Holzhausen, Federal Republic of Germany. The Conference, sponsored by the German Society for Technical Cooperation, assessed the worldwide progress of research and application of pesticidal products of the neem tree, Azadirachta indica, as well as development of the tree as a commercial crop in many areas of the world. The 70 participants represented the United States, Nicaragua, Suriname, United Kingdom, Germany, Thailand, France, Switzerland, Netherlands, Japan, India, Bangladesh, Italy, Israel, Togo, Sudan, Mauritius, Kenya, and Australia. Mr. Jacobson presented a report entitled "Neem Research in the U.S. Department of Agriculture--an Update," and was reappointed coordinator of neem research for the Western Hemisphere.

FEDERAL WOMEN'S PROGRAM

The Federal Women's Program (FWP) Committee at BARC was established as a vital part of the EEO Program to enhance the skills, training, employment, and promotion opportunities available to women. The following are your representatives on the Committee. Be sure to take time to get to know them.

Kathryn Reynolds
Animal Operations Unit
Building 177C, 344-2243

Suzanne Batra
IIBIII, Building 417
344-2384

Judith Zidar
API, Building 1180
344-2162

Doris Roberts
PPI, Building 011A
Room 165, 344-3848

Vivian D. Foley
FWP Advisor for BARC
Building 003, Room 219
344-3347

Charlotte Saltzberg
HSI, Building 004
Room 220, 344-2376

Gladys Bolton
AEQI, Building 001
Room 233, 344-3030

Sally Kravitz
PPHI, Building 046A
344-3607

Ruth A. McConnell
BHNRC, Building 308
Room 223, 344-2065

Ann Randall
Division of Operations
Building 426, 344-2319

Muriel O'Brien
PGGI, Building 009
Room 4B, 344-3617

Anne Dulin
ASI, Building 173
Room 106, 344-2258

Margaret Brady
U.S. National Arboretum
3501 New York Avenue, NE.
Washington, DC 20002
472-9240

COMMITTEE CHANGES

BARC EEO Advisory Committee:
Linda Watts replaces Crawford Lee Avery (Animal Operations Unit).

BARC Science Seminar Committee:
Patricia C. Augustine replaces Robert D. Romanowski (Animal Parasitology Institute).
Alan Lefcourt replaces Murray Bakst (Animal Science Institute).

VISITORS

April:

The Soybean Research Advisory Institute was given a presentation by scientists in PPHI. A general overview of the Center was provided by the Visitor Unit.

The Agricultural Chemicals Group of the FMC Corporation visited with scientists in AEQI and PPI and were given a short briefing on the Center.

Mr. Chamlong, Manager of the Agricultural Bank and Agricultural Cooperatives, escorted by Mr. Panton, Senior Agriculturist, World Bank, Thailand, were given a general overview by the Visitor Unit.

Dr. A. M. Van Doorn, Director of the Institute for Pesticide Research, the Netherlands, met with P. A. Putnam, and visited with selected scientists from AEQI and PPI.

Dr. C. C. J. M. Vander Meijs, Director, Nutrition and Quality Affairs Services, Ministry of Agriculture and Fisheries, The Hague, Netherlands, was given an overview of BARC by the Visitor Unit.

May:

Dr. Antoine Ndegeya, Rwanda, met with Paul W. Moe, Ruminant Animal Nutrition Laboratory, ASI, and was given a briefing on animal research at BARC.

Sheik Mohamid Ali Al-Qatabi, Sheik Abdullah Bin Ali Patab, and Seif Sultan Al-Busaidi of Oman, toured the Center to get an overview of the research.

Mr. Djibril Diallo, Political Secretary of the Malian Democratic People's Union, accompanied by the Ambassador of Mali, visited with the Center Director, P. A. Putnam. Following a discussion of the BARC/ARS management system, the visitors were given a tour of the Center.

P. A. Putnam

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 148 July 1983

ASSISTANT SECRETARY VISITS BARC

Dr. Orville G. Bentley, Assistant Secretary for Science and Education, USDA, and two members of the staff of the Science Advisor to the President (Drs. Gordon Wallace and Carl Leventhal) spent the day at Beltsville on July 19. The Center Director, Paul Putnam, presented an overview of agricultural research at the Center, and the group then visited a number of research laboratories representative of programs at BARC.

Drs. Wallace and Leventhal are responsible for policy issues in the life sciences at the Office of Science and Technology Policy (OSTP) in the White House. Dr. Wallace has a special interest in those agricultural science policy issues previously handled by Denis Prager, who left OSTP in April. Wallace has a background in veterinary sciences and worked at NIH.

Dr. Terry B. Kinney, Jr., the ARS Administrator, and Mr. Mike Hoback, an assistant to Dr. Bentley, accompanied the group during the Beltsville visit.

GENETIC ENGINEERING AGREEMENTS SIGNED

Genetically engineered proteins, required as a first step in devising a potential vaccine against a serious disease of poultry, will be produced by three companies under agreements signed at the Animal Parasitology Institute (API) on June 29, 1983. Harry D. Danforth, Microbiologist at API, points out that the goal is to develop a broad-range vaccine against coccidiosis. This parasitic intestinal disease annually costs the U.S. poultry industry more than $150 million in direct losses and about $100 million for anticoccidial drugs.

Entering in the memoranda of agreement are Hoffman-La Roche, Inc., Nutley, New Jersey; Genex Corporation, Rockville, Maryland; and Vineland Laboratories, an affiliate of ImmunoGenetics, Inc., Vineland, New Jersey. According to the agreement, proteins called antigens will be identified by use of monoclonal antibodies furnished by ARS. These antibodies are produced via the hybridoma technique wherein spleen cells from mice inoculated with the coccidial parasite are fused with mouse cancer cells grown in cell cultures. Fused cells resulting from this biotechnology not only possess the immortality of cancer cells but also manufacture identical antibodies that react with specific forms of chicken coccidiosis.

Danforth and his colleagues at the Poultry Parasitic Diseases Laboratory have produced monoclonal antibodies against several species of coccidia affecting poultry. Their work, reported last year at a meeting of the Poultry Science Association, was considered the first step in formulating a vaccine against the disease.

The agreements to produce the antibodies were executed on behalf of USDA by William H. Tallent, Regional Administrator for the Northeastern Region of ARS.

WATER DATA BANK ONLINE

Water (or lack of it) is of critical concern for modern agriculture. Scientists now can have instant access to 50 years of hydrologic data compiled by ARS researchers through a new system designated as REPHLEX...or REtrieval Procedures for HydroLogic Data From ARS EXperimental Watersheds.

REPHLEX is a computer system for gaining direct telephone access to the ARS Hydrologic Data Bank at the Washington Computer Center. The Data Bank contains precipitation and runoff records from 300 watersheds around the U.S. It also includes information on land use, vegetation and cover conditions, as well as soils, topography, geology and climatological data for many watersheds.

A "REPHLEX User's Guide" has recently been published by the Water Data Laboratory, PPHI. Copies are available from J. B. Burford, Room 236, Building 007.

DICKINSON RECEIVES NDHIA AWARD

Frank N. Dickinson, Chief, Animal Improvement Programs Laboratory, ASI, was the first recipient of the National Dairy Herd Improvement Association (NDHIA) Award at the annual meeting of the American Dairy Science Association in Madison, Wisconsin, in June. The NDHIA is the national dairymen's organization for the 66,000 dairy herds participating in the National Cooperative Dairy Herd Improvement Program. The award is made for outstanding contributions to the dairy industry through the Dairy Herd Improvement Program and consists of $1,000 and an inscribed scroll.

KNUTSON DETAILED TO NSF

Lloyd V. Knutson, Chairman, Insect Identification and Beneficial Insect Introduction Institute, will be on detail as Program Director, Systematic Biology, National Science Foundation, from August 1983 to August 1984. He will be working with the Associate Program Director, Dr. James Edwards, a vertebrate, functional morphologist, from Michigan State University, and the Assistant Program Director, Dr. James Rodman, a botanist, from Yale, in managing the several hundred basic research proposals reviewed by the Program, its peer reviewers, and advisory panel during the year. The Systematic Biology Program's budget in FY 84 is expected to be over $11 million, as compared to $8 million in FY 83. Dr. Knutson is the first USDA systematist to serve in this 1- to 2-year rotating position, and one of the few entomologists selected to serve with the Systematic Biology Program. Dr. Knutson's address will be: Program Director, Systematic Biology Program, National Science Foundation, 1800 G Street, NW., Washington, D.C. 20550, telephone (202)357-9588.

COMMITTEE CHANGE

BARC Science Seminar Committee:

Stephen L. Sinden replaces Richard H. Zimmerman as the representative from the Horticultural Science Institute.

BARC EEO ADVISORY COMMITTEE MEMBERS:

Dr. P. A. Putnam - Chairman
Bldg. 003, Rm. 227, BARC-W
344-3078

Mr. Delbert Beane - Union
Bldg. 431, BARC-E
344-2595

Ms. Gudrun Christenson, PGGI
Bldg. 265, Rm. 33A, BARC-E
344-2431

Ms. Yen-i Wong, AEQI
Bldg. 306, Rm. 118, BARC-E
344-2472

Mr. Charlie McCall - DO
Bldg. 030, BARC-W
344-2750

Ms. Linda Watts - AnOp
Bldg. 177C, BARC-E
344-2243

Ms. Pat Espenshade - IIBIII
Bldg. 003, Rm. 23, BARC-W
344-4450

Dr. Jitender P. Dubey - API
Bldg. 1001, BARC-E
344-2128

Ms. Vallie Bray - PPI
Bldg. 011A, Rm. 214, BARC-W
344-3689

Ms. Barbara Wood - FWP
Bldg. 263, Rm. 21, BARC-E
344-2334

Mr. Obie Patterson
NER-EEO Officer
Bldg. 003, Rm. 330, BARC-W
344-3507

Ms. Mamie E. Vernon - ATFARD
Bldg. 007, Rm. 201, BARC-W
344-3124

Ms. Judy Abbott - HSI
Bldg. 002, Rm. 6, BARC-W
344-3128

Ms. Mary Lou Lindholm
NER Personnel
Bldg. 003, Rm. 106, BARC-W
344-3444

Ms. Vivian D. Foley
Administrative Office
Bldg. 003, Rm. 219, BARC-W
344-3347

Dr. Elliott Berlin - BHNRC
Bldg. 308, Rm. 109, BARC-E
344-2297

Mr. A. L. Fleming - PPHI & ASM
Bldg. 001, Rm. 206, BARC-W
344-3143

Ms. Deborah Haines - ASI
Bldg. 200, Rm. 207, BARC-E
344-2869

Ms. Judy Harrington
NER Hispanic Coordinator
Bldg. 003, Rm. 324, BARC-W
344-2756

Responsibilities: The BARC EEO Advisory Committee, chaired by the Center Director, was established in May 1973. This committee functions to support the EEO program at Beltsville and emphasizes matters of concern to employees and management at the Center. Approximately one-third of the membership on the committee rotates annually in October. Nominations are invited from the Institutes, Division of Operations, and other Units at BARC. The current rotation schedule is: 1983 - Y. Wong, J. Abbott, E. Berlin; 1984 - D. Haines, V. Bray, P. Espenshade; 1986 - J. Dubey, G. Christensen, C. McCall, L. Watts, A. Fleming.

AWARDS

Cash Awards:

Balsley, Paul E., Maintenance and Construction Branch, Division of Operations. (Applying superior procedures and techniques of the instrument maker trade thereby allowing scientific research to progress more rapidly.)
Knutson, Lloyd V., Chairman, Insect Identification and Beneficial Insect Introduction Institute. (Providing outstanding leadership to programs on insect and mite systematics and the introduction of arthropods beneficial to American agriculture.)
Rockford, Rosemary, Insect Pathology Laboratory, PPI. (Expert application of previously acquired research experience, initiative in assuming extra duties, and creativity in experimental procedure involving two major laboratory projects.)
Snyder, Freeman W., Light and Plant Growth Laboratory, PPHI. (Contributions to knowledge of photosynthate partitioning in sugar beet breeding that offer significant yield increases and are now employed internationally.)

EMPLOYEE ACTIVITIES

James "Jack" Murray, Field Crops Laboratory, PGGI, has been appointed to the Board of Directors of the Musser International Turfgrass Foundation. The Musser Foundation was formed 15 years ago as a tribute to Professor H. B. Musser, Pennsylvania State University turf seed agronomist and developer of Penncross bentgrass and Pennlawn fescue, and a noted educator. The Foundation is dedicated to developing and financing basic research in turfgrass science. Fellowships are awarded to talented students interested in turfgrass research projects.

Norman J. Stern, Meat Science Research Laboratory (MSRL), ASI, has been notified that his BARD proposal "Detection and control of Campylobacter jejuni in poultry and red meats" is one of 32 proposals elected this year for funding. One hundred and fifty-eight proposals were evaluated by BARD. Dr. Stern's cooperating scientist, Dr. Ben Juven, from Bet Dagan, Israel, is finishing a 1-year sabbatical at the Russell Research Center and will visit the MSRL in a few weeks on his return trip to Israel. The total of the 3-year grant is $150,000.

AFTER-HOURS CONFERENCE ROOM USE

Scheduling of all conference rooms at BARC (with the exception of the Director's Office Rooms 224 and 233, Building 005, and the NAL's 14th Floor) are reserved through the BARC Visitor Unit, 344-2403. This includes after-hours use as well as use between 8 a.m. and 5 p.m.

VISITORS

June:

Mr. Suliman Ceesay, Under Secretary of Agriculture, Gambia, met with P. A. Putnam, Director, and was given an overview of BARC.

Mr. Jack Crane, Director of Research and Development, Sperry Rand Corporation, Lancaster, Pennsylvania, visited Beltsville to confer with the NPS and BARC scientists on future research directions as they relate to mechanization, feed and forage quality, and minimum tillage.

Two hundred cranberry and citrus growers spent June 14 at Beltsville and visited eight different research projects. Dr. James Tillotson, Vice President for Research and Development, Ocean Spray Cranberries, Inc., organized the visit.

Dr. R. B. Dougherty, group leader of chemotherapy and immunology, American Cyanamid Company, and Drs. I. B. Wood and J. Pankavich, parasitologists, visited the Animal Parasitology Institute to discuss research directions and the future of chemotherapy vs. immunology in the control of nematode parasites of livestock.

Dr. R. B. Mitra, director of the National Chemical Laboratory, Puna, India, visited the Livestock Insects Laboratory, AEQI, to discuss controlled release technology for control of arthropod pests indigenous to India.

Mr. Ifao Ohno, Sumitomo Chemical Company, Ltd., Japan, visited scientists in the Livestock Insects Laboratory, AEQI, to discuss work on insect growth regulators, fumigants, and controlled release technology.

July:

Ten of the Nation's leading soybean researchers, including Dr. Maurice Gebhardt and Dr. Loyd Wax of ARS, visited soybean research interests at BARC on July 15. This Soybean Researchers' Recognition Program Tour, now in its third year, is sponsored by the American Soybean Association and ICI Americas, Inc.

Dr. K. L. Chadha, Director of the Indian Institute for Horticultural Research (IIHR), visited BARC on July 22 to discuss cooperative programs on vegetable breeding and horticultural research. Arrangements for visiting scientists from IIHR to work with the staff of the Vegetable Laboratory, HSI, are being negotiated.

VISITOR UNIT QUARTERLY TABULATION

During the quarter ending June 30, 1983, the Visitor Unit reports the following information:

No. of Visitors	High Level/Professional Group/Individuals	Students	Other	Countries Represented
1,624	822	256	546	24

ESSEX E. FINNEY, JR., Acting Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 149 August 1983

BARC AWARDS PROGRAM

The 11th Annual BARC Awards Ceremony will be held September 14, 1983, at 1 p.m., in the Auditorium of Building 003. Dr. E. L. Kendrick, Acting Assistant Secretary for Science and Education, will be the guest speaker. Dr. Kendrick was at Beltsville for many years prior to 1972, and served as the Southern Regional Administrator, ARS, before returning to the Washington, D.C., area in 1982. Dr. Kendrick will speak on "Rewards of Research." All employees are invited to attend this awards program.

SPECIAL OUTSIDE AWARDS

Norman J. Stern, Research Microbiologist, Meat Science Research Laboratory, ASI, was this year's recipient of the "Young Scientist Award," presented by the Northeastern Section of the American Society of Animal Science and the American Dairy Science Association. Dr. Stern was recognized for his research on the incidence of potential pathogenic bacteria such as Yersinia enterocolitica and Campylobacter jejuni on carcasses and meat. He characterized growth parameters and isolation procedures for these bacteria. This annual award recognizes outstanding contributions to the animal industry through business, extension, research, or teaching.

Anthony W. Kotula, Chief, Meat Science Research Laboratory, ASI, received the "Signal Service Award" from the American Meat Science Association in recognition of devoted service and lasting contribution to the meat industry. The award was presented at the annual Reciprocal Meat Conference held at Fargo, North Dakota.

W. Donald Schultze, Research Bacteriologist with the Milk Secretion and Mastitis Laboratory, ASI, received the West Agro Award at the American Dairy Science Association annual meeting held at Madison, Wisconsin. This award recognized Dr. Schultze for outstanding contributions in research and advisory roles toward the control of mastitis, a major source of economic losses in the U.S. dairy industry.

LABORATORY CHIEF APPOINTMENTS

Two new Laboratory Chiefs have been appointed to leadership positions in AEQI since the beginning of 1983.

Walter A. Gentner is the new Chief for the Weed Science Laboratory. Dr. Gentner earned his degrees in botany and plant physiology at George Washington University. He joined the Department in 1955 to conduct research on herbicides. Since 1970, he has had the additional responsibility for research on narcotic plants and is currently the Technical Advisor to Dr. T. J. Army for the ARS international program on control of narcotics. He received

the USDA Superior Service Award for work on narcotics and the Northeastern Weed Science Society Distinguished Member Award for his research in weed science.

Richard L. Ridgway was selected as Chief for the Organic Chemical Synthesis Laboratory (OCSL). Dr. Ridgway earned his B.S. degree in agronomy at Texas Tech University and his advanced degrees in entomology at Cornell University. He joined ARS in 1963 as a research entomologist at College Station, Texas, and served as Investigations Leader and then as Research Leader before transferring to the National Program Staff with responsibilities for cotton and tobacco insects. Prior to joining OCSL he served as Special Assistant to the Regional Administrator of the Southern Region. He is the recipient of the CIBA-GEIGY Agricultural Award, USDA Unit Superior Service Award, and S&E Special Achievement Award.

INTERNATIONAL CONFERENCE ON INSECT NEUROCHEMISTRY AND NEUROPHYSIOLOGY

The International Conference on Insect Neurochemistry and Neurophysiology was organized by scientists of the Insect Reproduction Laboratory (IRL), AEQI, and held at the University of Maryland, College Park, August 1-3. Scientists from 17 countries presented 65 papers on insect neuroscience and exchanged information on recent laboratory techniques and research results. Alexej B. Borkovec, Chief of the IRL and Conference Chairman, was asked to chair a Steering Committee on Insect Neuroscience to make plans to form a permanent U.S. Standing Committee for this important new field of science. The Conference was jointly financed by ARS, the National Science Foundation, and industry.

TURFGRASS FIELD DAY

The USDA Turfgrass Field Day was held at BARC on August 3. Approximately 190 people attended from nine States and the District of Columbia. State experiment stations, universities, State Highway Departments, Park and Planning Boards, golf courses, cultivated sod producers, seed companies, and other private industrial groups were represented. The biannual Field Day is organized and conducted by the Field Crops Laboratory, PGGI. Scientists presenting research included: Jack Murray, Roger Ratcliffe, and Nichole O'Neill (Field Crops); A. J. Oakes (Germplasm Resources); Pete Dernoeden (University of Maryland); and Kevin Morris (Maryland Turfgrass Council). Research areas included turfgrass management, breeding, pathology, and entomology.

VISITING SCIENTISTS

Pesticide Degradation Laboratory(PDL), AEQI:

Dr. J. M. R. S. Bandara, Head of Agricultural Biology, University of Peradeniya, Sri Lanka, is spending 3 months in the PDL on an International Atomic Energy Agency fellowship. He will work with Philip C. Kearney, PDL Chief, on a project dealing with human exposure to Paraquat during harvest of treated marijuana. This is a joint project with Phillip G. Vincent and Walter A. Gentner, Weed Science Laboratory, AEQI.

Field Crops Laboratory (FCL), PGGI:

Dr. Teruto Nagoyoshi, Associate Professor, Faculty of Agriculture, Kobe University, Japan, will be with the FCL for 9 months. He will be studying genetics of the host pathogen system of wheat and of wheat isozymes with Gary R. Bauchan and John G. Moseman.

Dr. Helena Goldenberg-Poiarkova, Taxonomist, Field Crops Department, The Volcani Center, Bet Dagan, Israel, will be with the FCL for 4 months. She will be studying taxonomy of wild wheat, Triticum dicoccoides, with John Moseman, FCL, and Edward E. Terrell, and Charles R. Gunn, Plant Exploration and Taxonomy Laboratory, PGGI.

EMPLOYEE ACTIVITIES

Judith H. Shaw, Parasite Classification and Distribution Unit, API, reads books and newspapers as a volunteer for the Washington Ear, a closed-circuit radio station for blind and handicapped persons in the Washington area. The station provides broadcasts of daily newspapers, magazines, and current books, and also narrates for some television programs. More volunteers are needed. Anyone who is interested in listening to these brodcasts should call the station to receive information on how to obtain the receivers (681-6636).

On August 2-6, H. Ray Gamble and Joseph F. Urban, Jr., Nonruminant Parasitic Diseases Laboratory, API, attended the Second International Immunoparasitology Conference, in Lincoln, Nebraska. Dr. Gamble presented "Use of monoclonal antibodies for isolation of diagnostic and vaccinating reagents in swine Trichinosis." Dr. Urban presented "Characterization of murine IgE responses after helminth infection." They also toured the Roman L. Hruska U.S. Meat Animal Research Center at Clay Center.

AWARDS

Cash Awards:

Hill, John R., Animal Operations Unit, Office of the Director. (Sustained outstanding work performance in the care, feeding, and management of cattle assigned to nutrition experiments.)

Yates, Mary J., Chairman's Office, IIBIII. (Superior service in facilitating delivery of published scientific research results to the entomological community worldwide, thus fulfilling one of the mandates of ARS.)

Quality Increases:

Carpenter, Sr., Gordon T., Visitor Unit, Office of the Director. (Great effectiveness in working with symposia committees and exceptional overall service.)

Hammond, Andrew C., Ruminant Nutrition Laboratory, ASI. (Especially creative and productive research program to increase protein synthesis in cattle.)

Huntington, Gerald B., Ruminant Nutrition Laboratory, ASI. (Sustained effort in research providing critical quantitative measurement of nutrient absorption by cattle.)

Roberts, Ralph T., Water Data Laboratory, PPHI. (Outstanding performance exhibited in the study and selection of digitizer equipment and in the manipulation of unique data files.)

Williams, Edward E., Jr., Ruminant Nutrition Laboratory, ASI. (Sustained effort and superior dedication related to the technical support of experiments on composition of growth and protein metabolism in beef cattle.)

Wood, Linda L., Soilborne Diseases Laboratory, PPI. (Sustained highly competent and dependable performance in a critical period during which the lab grew from 6 to 11 SY's, and was responsible for organizing BARC Symposium V and one workshop.)

VISITORS

July:

Minister of Agriculture, Mohammad Fazil Janjua, Pakistan, visited Beltsville and was greeted by P. A. Putnam, Director. Following stops at the Horticultural Crops Quality, Pesticide Degradation, and Avian Physiology Laboratories, and a stop at the Beltsville Human Nutrition Research Center, a general overview was presented by the Visitor Unit.

Honorable Lassaad Ben Osman, Minister of Agriculture, Ambassador Habib Ben Yakia, and Nustapha Lasrum, Director of the National Agricultural Research Institute of Tunisia, met with Essex E. Finney, Jr., Acting Director, and George R. Wiggans, Animal Improvement Program Laboratory, ASI. John Fleming, Visitor Unit, provided a tour of the Center.

Dr. D. G. Groothuis, a veterinary surgeon from the Rijks Instituut Voor de Volksgezondheid, Bithoven, Netherlands, visited the Meat Science Research Laboratory, ASI. His interests included microbiology of meats, and antibiotic residues.

August:

Dr. Sveint Gumpen, Norwegian Food Research Institute, and Dr. Larry L. Borchert, Director of Basic and Applied Research, Oscar Mayer Food Corp., Madison, Wisconsin, visited the Meat Science Research Laboratory, ASI, to discuss current research and plans of the laboratory.

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 150 September 1983

NEW CHAIRMAN OF PARASITOLOGY ANNOUNCED

Ronald Fayer, Chief of the Ruminant Parasitic Diseases Laboratory, will become the new Chairman of the Animal Parasitology Institute (API), upon the retirement of Harry Herlich in January 1984. In his new role as Chairman of API, Dr. Fayer will be responsible for the Institute's program of research directed toward preventing and controlling parasitic infections in livestock and poultry.

Dr. Fayer received a B.S. degree in biology from the University of Alaska, and an M.S. and Ph. D. from Utah State University. He joined ARS in 1968 and has published over a hundred scientific papers. Fayer was honored by the National Wool Growers Association in 1975, for his research on Sarcocystis. He is a recipient of the USDA Superior Service Award, and the Henry Baldwin Ward Medal --which is the highest honor of the American Society of Parasitologists. He has served on the ARS National Program Staff, the editorial board of three international journals, and on numerous committees of scientific societies.

KEY ADVANCE IN PLANT MOLECULAR BIOLOGY

A landmark achievement, combining advances in basic biology with advances in understanding properties of molecules, is being published by Judith B. St. John, Weed Science Laboratory, AEQI, in cooperation with BASF scientists. A mathematical formula was derived that can accurately predict molecular structures that will alter fatty acid ratios of plants, thereby partially controlling plant responses to environmental stress. The ability to make such predictions has been the aim of more than 30 years of structure-activity research on herbicides. The key chemical was introduced by Beltsville scientists 14 years ago. Through sole source control of the primary compound, Dr. St. John carefully orchestrated international research to establish principles in basic biology and then the process of cluster analysis of related compounds to distinguish biochemical sites of action affected by portions of the inhibitory molecules. A large number of State, Federal, and foreign scientists cooperated with Dr. St. John in establishing the biological actions prior to cooperation from industrial chemists in computerized analysis to relate molecular properties.

ARS FELLOWSHIP PROGRAM

Dr. Terry B. Kinney, Jr., the Administrator of ARS, recently unveiled a new Fellowship Program for highly qualified research scientists (Grade 13 and above) and administrative personnel (Grade 12 and above) employed with ARS. This Fellowship Program provides a limited number of opportunities for ARS scientists and administrative personnel to participate in a 1-year research or education program at an accredited domestic or foreign educational or research institution of their choice.

ARS provides financial support to individuals selected to participate in the program. Support covers salary, travel, per diem, tuition, books, supplies, and related fees. A copy of the Fellowship announcement, including the format for preparing an application, may be obtained through Vivian Foley, the Beltsville Administrative Officer, Room 219, Building 003.

COMPETITIVE GRANTS

Two BARC scientists recently received support for their research from the USDA Office of Competitive Research Grants: Dean E. Cress, Tissue Culture & Molecular Genetics Laboratory, PPHI, ($156,000) for a project on molecular analysis of gene expression during carrot somatic embryogenesis; and Lila O. Vodkin, Seed Research Laboratory, PGGI, ($80,000) for research on the structural analysis, distribution, and uses of a soybean insertion sequence.

BELTSVILLE COLLABORATES WITH TEXAS NUTRITION CENTER

Scientists from the ARS Children's Nutrition Research Center (CNRC) at Baylor College of Medicine visited Beltsville in May to discuss some of their research on lactose metabolism in infants. One phase of the research involves the use of milk either enriched or depleted in ^{13}carbon content. Henry Tyrrell, Ruminant Nutrition Laboratory, ASI, and Frank McDonough, Protein Nutrition Laboratory, Beltsville Human Nutrition Center (BHNC), are cooperating and assisting with this project. In addition to the production of ^{13}C enriched milk, BARC scientists are interested in defining the rate at which milk produced by a cow changes in ^{13}C content in response to dietary change. This information is not available in the literature and will help validate research already in progress. This cooperative effort between BARC, BHNC, and CNRC scientists was stimulated by Charles A. Kiddy, NPS.

WORKSHOP ON INSECT PEPTIDES

The second annual ARS Insect Peptide Workshop was convened and chaired by A. B. Borkovec, Chief, Insect Reproduction Laboratory, AEQI, at BARC on August 4. The purpose was to exchange information on current ARS research on insect peptides and facilitate cooperation among participating ARS laboratories. Twenty-seven ARS scientists attended. W. Klassen, National Program Director for Crop Protection, discussed the role and priority of this research area in the ARS Strategic Plan, and E. P. Marks, National Technical Advisor for Insect Physiology, outlined his function as an intermediary and catalyst in interlaboratory collaboration.

VISITING SCIENTISTS

Tobacco Laboratory (TL), PGGI:

Dr. Seval Sekin, Associate Professor, Field Crops Production (tobacco), Aegean University, Izmir, Turkey, is spending 6 months in the TL on a Fullbright Scholarship for research scientists. She will work with Donald W. DeJong on a project dealing with chemical characterization of Turkish (oriental) tobacco as related to smoking and health aspects. Collaboration is planned with Lynn Channing, TL, and with scientists at the USDA tobacco laboratories in Oxford, NC, and Athens, GA, involving experimental cigarette preparation and chemical analyses of smoke.

Pesticide Degradation Laboratory (PDL), AEQI:

Dr. Regina Kloskowski, Research Associate at the Institute for Agronomy, Nuclear Research Center, Julich, Federal Republic of Germany, is spending 2 months at PDL. She is working with Charles S. Helling, on methods for extracting and characterizing bound pesticide residues in soils.

AWARDS

Special Awards:

The International Union of Pure and Applied Chemistry (IUPAC), Commission on Pesticide Chemistry, presented a certificate to Philip C. Kearney, Chief, Pesticide Degradation Laboratory, AEQI, at meetings in Denmark on August 19. The citation reads: "For Distinguished Service to the Advancement of International Pesticide Chemistry as a Member of the Commission."

Jack R. Plimmer, former Chief of the Organic Chemical Synthesis Laboratory, AEQI, received the Burdick and Jackson International Award for Pesticide Chemistry, during the August meeting of the American Chemical Society. He is the third member of AEQI to receive the highly prized research award. Dr. Plimmer is currently on a foreign assignment with the International Atomic Energy Agency in Vienna, Austria.

Cash Award:

Schroder, R. F. W., Beneficial Insect Introduction Laboratory, IIBIII. (Superior performance of special assignments as Acting Laboratory Chief, and in arranging for quick and efficient relocation of the Beneficial Insect Introduction Laboratory.)

Quality Increases:

Goins, Ernest W., Vegetable Laboratory, HSI. (Sustained excellence and outstanding achievements in detecting potato viruses using enzyme-linked immunosorbant assay (ELISA) methods.)

EMPLOYEE ACTIVITIES

George B. Willson, Biological Waste Management & Organic Resources Laboratory, AEQI, served as an advisor for the Asian Development Bank in the Philippines, from July 25 to August 26. He worked on an assessment of the financial, technical, and economic viability of a proposed project on agricultural waste recycling in the Philippines, including composting agricultural wastes to produce organic fertilizer and biogas generation from agricultural wastes.

James F. Parr, Chief, Biological Waste Management & Organic Resources Laboratory, visited Jamaica in July. Dr. Parr served as a consultant to the Food and Agriculture Organization, United Nations, assisting in various aspects of biogas technology and the recycling of organic wastes for improving the productivity of agricultural soils.

Jitender P. Dubey and Ronald Fayer, Ruminant Parasitic Diseases Laboratory, API, visited laboratories in New Zealand and Australia and presented seminars on their research, before participating in the World Association for Advancement of Veterinary Parasitology meeting held at Perth in August. They also met with scientists in Tasmania and South Australia with whom they are conducting cooperative studies on parasites of cattle and sheep.

VISITORS

August:

Members of the staff of the Senate Agriculture Appropriations Committee and of the Secretary's Office spent the day at Beltsville on August 31 for a briefing on the Center program and research activities. They were hosted by P. A. Putnam, Director, and Dr. Ed Kendrick, the Deputy Assistant Secretary for Science and Education. Dr. Kinney, the ARS Administrator, joined the group for lunch and commented upon the importance of the national programs in agricultural research.

September:

Professor Allal Dakkak, Dean of the Veterinary College and Head of the Department of Parasitology, Agronomic and Veterinary Medicine Hasson II Institute, Rabat, Morocco, visited Harry Herlich, Chairman, and other staff members of the Animal Parasitology Institute. They discussed the patho-physiology of parasitic diseases, especially in respect to ruminants.

A team representing the Mixed Feed and Pork Producers Associations of Greece, accompanied by Mr. Joseph Zak of the American Soybean Association, visited BARC on September 12. They visited with Norman C. Steele, Nonruminant Animal Nutrition Laboratory, ASI, and discussed various soybean and fiber diets related to gestating sows and weaned piglets.

Dale Didion, Budget Examiner for Science and Education, Office of Management and Budget, spent the day at Beltsville on September 21, becoming familiar with the Center. He visited 11 research projects and discussed issues of interest from a budgeting perspective. Mr. Didion has graduate training in statistics and previously operated a farm in Ohio.

P. A. PUTNAM, Director
Beltsville Agricultural Research Center

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 151 October 1983

KLASSEN NAMED BELTSVILLE DIRECTOR

Waldemar Klassen has been appointed as Acting Director of the Beltsville Area of ARS. This new area consists of the Beltsville Agricultural Research Center, the Beltsville Human Nutrition Research Center, the U.S. National Arboretum, and the Family Economics Research Group.

Dr. Klassen received his B.S. and M.S. degrees in entomology from the University of Alberta, and a Ph. D. in zoology from the University of Western Ontario in 1963. After serving as a postdoctoral scientist at the University of Illinois, he joined the ARS Metabolism and Radiation Research Laboratory, Fargo, North Dakota, in 1965. He was appointed leader of the Laboratory's Insect Physiology and Metabolism Section in 1967.

In 1971, Dr. Klassen served as Acting Assistant Director of the Entomology Research Division in Beltsville, Maryland, and then was appointed to the position of Assistant to the ARS Deputy Administrator for Plant Science and Entomology.

Dr. Klassen joined the National Program Staff in 1972. His major responsibilities included coordination of ARS' National Research Programs on basic insect control research; pilot testing of alternative methods for pest control; and integrated pest management systems research.

Dr. Klassen has authored about 100 scientific publications. His recognitions include the Entomological Society of Alberta Prize, the President's Prize of the Entomological Society of Ontario, a medal of the Eighth International Congress of Plant Protection, and the USDA Superior Service Award.

Dr. Klassen, his wife and three children reside in Beltsville, Maryland.

BARC CHEMIST SELECTED AS NER SCIENTIST OF THE YEAR

Malcolm J. Thompson, a research chemist in the Insect Physiology Laboratory, PPI, has been selected as the "Regional Scientist of the Year" for the Northeastern Region of ARS. In recognition of Mr. Thompson's research accomplishments, Terry B. Kinney, Jr., the ARS Administrator, will present Thompson with a $2,500 bonus, a plaque, and $25,000 in additional funding for his research.

Thompson is widely recognized for his research on chemicals that control insect development, especially the insect molting hormones (ecdysteroids). Several synthetic compounds produced by Thompson and his coworkers are able to sterilize female boll weevils by blocking egg formation. Thompson also synthesized a hormone that prevents caterpillars from maturing into moths or butterflies. This proved to be the main juvenile hormone found in most insects.

In addition to his basic studies on insect chemistry, Thompson also has played a key role in the isolation and synthesis of plant hormones. In cooperation with other ARS scientists, Thompson formulated several synthetic plant growth regulators called brassinosteroids. Several of these compounds are being evaluated around the world for their potential in increasing food supplies.

In his 28 years as a research chemist, Thompson has patented nine discoveries, written over a hundred research papers, and determined the structure and activity of scores of compounds from the natural world, particularly insect chemicals.

THE SEASON FOR GIVING - CFC

Each year you are asked to support the Combined Federal Campaign (CFC). This is a united effort by all Federal agencies to provide an opportunity for employees to contribute to support those who are in need.

I am asking that each of you support the 1984 USDA Combined Federal Campaign. Lewis W. Smith, Chairman, ASI, is our representative on the ARS Committee this year. The campaign began on October 27, and the ARS goal is $80,000.

Beltsville Area employees represent a major component of the ARS organization in the National Capital Area. Please join me in making an extra effort to do our best to help enrich the lives of those who need assistance. Let us give in the spirit of the "season of giving."

NEW SCIENTIST IN PARASITOLOGY

Joan K. Lunney joined the staff of the Nonruminant Parasitic Diseases Laboratory, API, October 3, 1983. Dr. Lunney comes from the National Institutes of Health where she was engaged in research on the immunogenetics of swine. She received a Ph. D. in biochemistry from Johns Hopkins University. Dr. Lunney will now initiate a program on the immunogenetics of pig response to parasitic infection and the potential for increased breed resistance in the control of swine parasites. Dr. Lunney has made many important contributions to understanding the immunogenetics of swine, and is recognized as a world authority on the major histocompatibility complex of swine.

VISITING SCIENTISTS

Livestock Insects Laboratory (LIL), AEQI:

Dr. Ibrahim A. Gaaboub, a Fulbright Scholar and Professor of Economic Entomology and Head, Plant Protection Department, Faculty of Agriculture, University of Alexandria, Alexandria, Egypt, is spending 1 year in the LIL. He will work with Dora K. Hayes, Chief of the LIL, on research to discover principles governing insect development and diapause. He is investigating hormonal and environmental interactions as they affect morphology and biochemistry of the face fly and other insects of agricultural importance.

Pesticide Degradation Laboratory (PDL), AEQI:

Dr. Jeffrey Karns, Department of Microbiology and Immunology, University of Illinois, Chicago, is working on a postdoctorate program in the PDL on the isolation and characterization of pesticide degradative plasmids in soil microorganisms with Philip C. Kearney, Laboratory Chief.

TOBACCO BUDWORM PHEROMONE CONFIRMED

Martin Jacobson and Victor E. Adler, Biologically Active Natural Products Laboratory, AEQI, in cooperation with A. H. Baumhover, ARS, Oxford, North Carolina, have discovered and confirmed existence of a male tobacco budworm pheromone inhibitory to courtship. The male uses a chemical identical to one of the trace components of the female pheromone mixture to warn other males away from his mate. The ratio of chemicals in the female mixture is a determining factor in successful calling of males. This ratio is altered when the male produces 1 million times more of this one component than is produced by the calling females, thereby negating female attractiveness. The discovery was confirmed with 4 years of field testing in North Carolina.

EMPLOYEE ACTIVITIES

Hydrology Laboratory (HL), PPHI:

Albert Rango, Chief, HL, PPHI, visited the Swedish Meteorological and Hydrological Institute in Norrkoping, Sweden, the last week of September. Dr. Rango was a guest of the World Meteorological Organization (WMO) and a participant in the WMO Technical Conference on the Results of Intercomparison of Models of Snowmelt Runoff. Eleven different models were represented in the project testing including the Snowmelt-Runoff Model (SRM) that was jointly developed and run by Dr. Rango.

David M. Hershfield, research meteorologist, HL, was one of 35 invited participants to the "Specialized Seminar on Rainfall as the Basis for Urban Runoff Design and Analysis," sponsored by the Second International Conference on Urban Storm Drainage, Copenhagen, Denmark, August 24-26. In addition to the paper, "Some Statistical Properties of Short-Duration Rainfall" which was delivered at the seminar, he also presented two papers after the seminar at the Technical University of Denmark at Lyngby.

John C. Price, physicist, HL, attended the International Colloquium on Spectral Signatures of Objects in Remote Sensing, in Bordeaux, France, to present the paper "Interpretation of Thermal Infrared Data to Augment Spectral Signatures." Following the conference, a meeting to plan cooperative efforts between SRS-ARS and their French counterparts was held in Avignon, France, on September 19-20. This cooperation, sponsored by the Office of International Cooperative Development, is directed toward improving agricultural yield forecasting through use of remotely sensed data.

AWARDS

Cash Awards:

Augustine, Patricia C., Poultry Parasitic Diseases Laboratory (PPDL), API. (Sustained superior performance in conducting and reporting research on turkey coccidia that has contributed markedly to the productivity of the PPDL.)
Danforth, Harry D., Poultry Parasitic Diseases Laboratory (PPDL), API. (Successful leadership in research on monoclonal antibodies against avian coccidia that has led to the establishment of a Memorandum of Understanding for private companies to genetically engineer coccidial-antigens that could lead to a vaccine against coccidiosis.)
Tucker, Mary C., Pesticide Impact Assessment Staff, AEQI. (Providing exceptional and outstanding service during the vacancy of the staff secretarial position and the training of a newly assigned secretary.)
Warthen, Jr., J. David, Biologically Active Natural Products Laboratory, AEQI. (Sustained effort in the preparation of a comprehensive review book chapter on natural insect feeding deterrents while maintaining his assigned work program.)
Whitt, Joanne M., Ruminant Nutrition Laboratory, ASI. (Sustained performance in sample collection and analysis, and dedication to research effort.)

Quality Increases:

Beard, Donna G., Animal Operations Unit, Office of the Director. (Exceptional effort and skill in providing accounting and administrative service and support to the Granary Unit of Animal Operations.)
Davis, Ronald A., Pesticide Impact Assessment Staff, AEQI. (Outstanding and exceptional performance for participation in commodity assessment activities on a national, regional, and State level.)
Goeken, Robert M., Seed Research Laboratory, PGGI. (Consistently performing duties at a high level of competence and quality. Especially noteworthy are his skills and knowledge in the area of molecular biology.)
Padula, Armand L., Pesticide Impact Assessment Staff, AEQI. (Outstanding and exceptional performance for participation in commodity assessment activities on a national regional, and State level.)
Saltzberg, Charlotte, Vegetable Laboratory (VL), HSI. (Expeditiously performing her duties as secretary to the Laboratory Chief, VL, in a most effective, efficient, and courteous manner.)

VISITORS

September:

Ms. Rujing Zong, and Messrs. Zingaun Zhu, Shouchun Qi, and Zhuangxin Song, members of the Chinese Fruit and Vegetable Preservation Delegation to the U.S. visited the Horticultural Crops Quality Laboratory, Fruit Laboratory, and Instrumentation Research Laboratory, HSI, to discuss information on precooling, freezing, and handling and quality control of fruits and vegetables.

Drs. Jia Shi-rong, Cai Shao-Hua, Yu Tian-yi, and Gong Ren-Xiong of the Chinese Academy of Agricultural Sciences, Beijing, PRC, visited API on September 12, to gather information on the use of monoclonal antibodies in agricultural

research. In the afternoon, a joint seminar-meeting was held that also included scientists from Genex, a firm involved in cooperative genetic engineering work with the Poultry Parasitic Diseases Laboratory.

October:

Japan's Dairy Herd Health and Dairy Herd Improvement Study Team, jointly organized by the U.S. Feed Grains Council and the Livestock Improvement Association of Japan, visited the Animal Improvement Programs Laboratory (AIPL), ASI. Members of the team met with Frank N. Dickinson, Chief, and Rex L. Powell, research geneticist (animal), and discussed current AIPL research on genetic evalutions of dairy cattle and the upcoming genetic base change.

Mr. Jairo Ramirez, Head, Planning Office, Institution of Marketing of Agricultural Products, Bogota, Colombia, visited the Meat Science Research Laboratory, ASI, on October 3. Mr. Ramirez was particularly interested in the marketing systems of food in the United States.

Dr. Peter Nansen, a veterinary parasitologist at the Royal College of Veterinary Medicine and Agriculture, Copenhagen, Denmark, visited with the staff of the Animal Parasitology Institute, October 5-6. He presented a seminar on trichostrongyle infections in ruminants and discussed possible future research collaboration on swine parasites with Joseph F. Urban and K. Darwin Murrell of the Nonruminant Parasitic Diseases Laboratory.

Subsequent editions of these NOTES will include items from the U.S. National Arboretum, the Beltsville Human Nutrition Research Center, and the Family Economics Research Group.

Waldemar Klassen

WALDEMAR KLASSEN
Acting Director
Beltsville Area

United States Department of Agriculture | Agricultural Research Service | Northeastern Region Beltsville Agricultural Research Center | Beltsville, Maryland 20705

NOTES FROM THE DIRECTOR

No. 152 November 1983

WHITE HOUSE SCIENCE ADVISOR VISITS BELTSVILLE

Presidential Science Advisor George A. Keyworth, II, visited the Beltsville Agricultural Research Center on October 3 and spent an afternoon meeting with scientists studying a variety of problems confronting American agriculture. Dr. Keyworth was accompanied by USDA Assistant Secretary Orville G. Bentley, and the ARS Administrator, Terry B. Kinney, Jr.

Keyworth noted that his visit was part of an ongoing effort within the Administration and USDA to assess the Unites States' competitive edge in agricultural science and technology. Ways of maintaining and increasing the competitive position of U.S. agriculture in world markets is an important task facing the U.S. research community and the agricultural enterprise. ARS scientists are expected to play a key role in harnessing new knowledge and technology to increase productivity and efficiency within the agricultural production and marketing system.

Among the research projects which the Presidential Advisor examined during his Beltsville tour were: anther culture techniques for selecting desired traits for plant germplasm enhancement; ex ovo embryo culture approaches for studying the effect of nutrition on embryonic development of turkeys; the use of hybridomas to produce antibodies against animal diseases; new tests to accurately identify Sarcocystis, a parasite affecting reproductive efficiency of sheep and cattle; viroids, viruses, and other disease-causing organisms which are threats to economically important plants; and chemical messengers (pheromones) emitted by insects to communicate with other members of their species.

Gordon Wallace, a senior policy analyst with responsibilities for agricultural research on the Science Advisor's staff, joined Dr. Keyworth for his tour of Beltsville.

KINNEY ADDRESSES BELTSVILLE EMPLOYEES

Terry B. Kinney, Jr., Administrator, Agricultural Research Service (ARS), spoke to employees at Beltsville on November 21 and shared some of his views on future challenges to the agricultural research community. He noted that the European community intends to vigorously increase its efforts in those sciences related to agricultural biotechnologies in order to capture a major share of the world food market. Dr. Kinney emphasized that this was a clear challenge to the U.S. agricultural enterprise and its implications for ARS are profound. Kinney stressed that ARS must respond to this challenge. Beltsville must move away from the status quo and strengthen existing biotechnology-related research thrusts.

Dr. Kinney indicated concern that we take vigorous action to address the proper role and opportunities for Beltsville to move more aggressively in this area and respond to the challenges which lie ahead.

SEMINAR HELD ON HYBRIDOMA TECHNOLOGY

Over 200 scientists from research institutions in the U.S. and from countries overseas attended an ARS/BARC Seminar on Hybridoma Technology in Agricultural and Veterinary Research, held at the Center of Adult Education, University of Maryland, on October 30 - November 1, 1983. Norman J. Stern, Meat Science Research Laboratory, ASI, chaired the committee which organized and carried out this seminar.

The sessions and workshops focused on methods and techniques, characterization of immunological responses, diagnosis of animal and plant diseases, development of animal vaccines, and applications of monoclonal antibodies in the plant sciences. Products and instrumentation used in hybridoma research were also displayed for scientists to become aware of the most recent advances which have been commercialized. The proceedings of the conference will be published.

INDUSTRIAL INTEREST IN AIR POLLUTION RESEARCH

Howard E. Heggestad, Plant Stress Laboratory, PPHI, was invited to speak on the impacts of ozone and sulfur dioxide on crop yields to scientists from several electric utility companies at a meeting in Washington, D.C., November 10, 1983, and to research scientists of the Monsanto Agricultural Products Company, St. Louis, early in 1984. The research at Beltsville has been a part of the National Crop Loss Assessment Network (NCLAN) sponsored by the Environmental Protection Agency since 1980. In 1983, the Electric Power Research Institute became a cosponsor. The Chemical Manufacturing Association is now considering support of the NCLAN program.

Dr. Georg H. M. Krause, Landes Anstalt fur Immissionsschutz, Essen, West Germany, visited with Dr. Heggestad in October. Recent research results suggest that elevated concentrations of ozone, rather than acid deposition, may be the primary cause of the very serious damage to forests observed since 1980.

VISITING SCIENTIST FROM THE PEOPLE'S REPUBLIC OF CHINA (PRC)

Mr. Zhuang Wuji, Central Analytical Laboratory, Chinese Academy of Agricultural Sciences, Beijing, PRC, is a visiting scientist for 1 year in the Pesticide Degradation Laboratory, AEQI. He will be working with Philip C. Kearney on pesticide residues in groundwater samples.

EMPLOYEE ACTIVITIES

Marcia J. Loeb, research physiologist, Insect Reproduction Laboratory, AEQI, presented a paper on "Modulation of Sperm Development in Heliothis by the Brain Subesophageal Ganglion and Interconnecting Nerves," at the Third International Symposium on Invertebrate Reproduction, in Tübingen, West Germany, August 22-27.

A. B. Borkovec, Chief, Insect Reproduction Laboratory (IRL), AEQI, presented an invitational lecture at the International Conference on Natural Products as Regulators of Insect Reproduction, in Jammu, India, October 1. He and Dr. H. Rembold, Max Planck Institute, West Germany, discussed the future of pesticides on Indian national radio on September 30, and on television on October 2.

Lawrence J. Sikora, Biological Waste Management & Organic Resources Laboratory, AEQI, attended the International Conference on Composting Solid Wastes and Slurries, held at the University of Leeds, England. He presented a paper in the main lecture program entitled, "Factors Affecting the Composting Process."

AWARDS

Cash Awards:

Lefcourt, Alan M., Milk Secretion & Mastitis Laboratory, ASI. (Development of a low-cost automatic alarm system which protects the safety of experimental cattle.)

Quality Increases:

Cavanaugh, Rita J., Plant Virology Laboratory, PPI. (Highly competent and dependable performance during a critical period of transition for the laboratory.)
Hagan, Jeanne H., Beneficial Insect Introduction Laboratory (BIIL), IIBIII. (Sustained superior performance of duties resulting in greater efficiency in BIIL's office operations.)
Hiers, Nadine E., Chairman's Office, PGGI. (Superior performance of secretarial responsibilities in the Office of the Chairman of PGGI.)
Smith, Kent L., Pesticide Impact Assessment Staff, AEQI. (Outstanding and exceptional performance for participation in commodity assessment activities on a national, regional, and State level.)
Spalding, Suzanne M., Insect Reproduction Laboratory (IRL), AEQI. (Sustained superior performance as a biological lab technician in the IRL.)
Vandross, Thelma L., Water Data Laboratory (WDL), PPHI. (Continuing outstanding performance as related to the operation of digitizer and graphic systems within the WDL.)

VISITORS

October:

Mr. Misar Ahamad, Department of Agronomy in Pakistan, Islambab, visited several scientists in the Soil Nitrogen & Environmental Chemistry Laboratory, AEQI. He discussed the efficient use of nitrogen fertilizer with John J. Meisinger; and the impact of tillage on soil-water-nitrogen in relation to corn with James L. Starr.

Dr. Victor Powell, CSIRO, Meat Research Laboratory, Cannon Hill, Australia, visited the Meat Science Research Laboratory, ASI, to discuss stimulation to enhance meat tenderness.

Dr. Marie Christine Montel, National Institut of Agricultural Research (INRA), Ceyrat, France, visited the Meat Science Research Laboratory, ASI, to discuss advances in the microbiology of meat.

Dr. Folkhard Isermeyer, Agricultural Economist at the University of Gottingen, West Germany, met with research geneticists H. Duane Norman and George R. Wiggans to receive details of the National Cooperative Dairy Herd Improvement Program and genetic evaluation procedures used in the United States.

Dr. Dierk Boie, Technical Assistant to the Board of Directors of Rinderbesamung Nord e.G., West Germany, met with the research staff of the Animal Improvement Programs Laboratory, ASI. Chief Frank N. Dickinson, and research geneticists H. Duane Norman, Rex L. Powell, and George R. Wiggans provided technical details of genetic evaluation procedures in the United States and made recommendations for improving procedures used in West Germany.

Mr. R. A. Posen, Director, Environmental Services Consultants, Grabowsky and Poort Ecoplan, the Netherlands, met with George Willson, Biological Waste Management & Organic Resources Laboratory, AEQI, to discuss the applicability of various composting methods, especially the Beltsville Aerated Pile Method for use in the Netherlands using animal manures, municipal soil wastes, and sewage sludges.

Mr. Nico Bosman, Managing Director, Natuurgroci Misstowave, Republic of South Africa, visited James F. Parr, Lab Chief, and George Willson, Biological Waste Management & Organic Resources Laboratory, AEQI, to discuss marketing and plant growth effects of compost.

November:

Mr. John R. Lovegrove, Assistant Branch Manager, The Shipping Corporation of New Zealand, Ltd., Auckland, New Zealand, visited the Meat Science Research Laboratory, ASI, to discuss export of meat and meat products, particularly extending the shelf life of fresh meat so that it can be transported without being frozen.

Messrs. Lennart Jarenback and Rune Lemos, NORDRECO AB Company, Bjuv, Sweden, visited the Meat Science Research Laboratory, ASI, to discuss all aspects of meat science, particularly improving the quality of beef, pork, and poultry.

Waldemar Klassen

WALDEMAR KLASSEN
Acting Director
Beltsville Area